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**2001**

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**EMERGENCY SERVICE VEHICLE**

**CRASHES**

## Missouri State Highway Patrol

A division of the

## Department of Public Safety

***2001***  
***MISSOURI***  
***EMERGENCY SERVICE VEHICLE***  
***CRASHES***

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**MISSOURI STATE HIGHWAY PATROL**  
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## FOREWORD

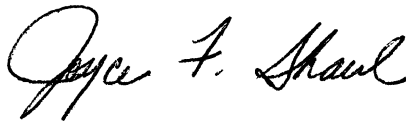
The mission of the Missouri Division of Highway Safety is to reduce the number and severity of traffic crashes throughout the state. In order to develop effective traffic safety programs and countermeasures, reliable statistical planning documents are imperative.

For this reason, the 2001 Missouri Emergency Vehicle Crashes report was produced by the Statistical Analysis Center of the Missouri State Highway Patrol at the request of the Missouri Division of Highway Safety.

The dedication of the individuals who compiled this report is to be commended. Without their diligence and expertise, Missouri officials would be hard-pressed to have this statistical data available in such a usable format.

It is our desire that traffic safety officials and managers of emergency vehicles would carefully review this publication to analyze local crash experience and evaluate their operations to ensure that proper precautions and training measures have been implemented.

If you require more information on traffic safety programs or need additional statistical information, please contact the Missouri Division of Highway Safety at 1-800-800-2358.

A handwritten signature in cursive script, reading "Joyce F. Shaul".

Joyce F. Shaul, Director  
Missouri Division of Highway Safety





## ACKNOWLEDGEMENTS

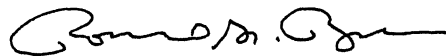
The Missouri Division of Highway Safety requested publication of this report to determine the magnitude, severity, and characteristics of traffic crashes involving emergency service vehicles in the State.

The primary source of information in this report was traffic crash data obtained from the Statewide Traffic Accident Records System (STARS). The Missouri State Highway Patrol, Traffic Division, is responsible for coordinating the STARS program as well as encoding all traffic crash data being reported.

Special recognition is given to all Missouri law enforcement agencies and officers who provide traffic crash investigation services on Missouri roadways and report their findings to STARS. Because of their efforts, traffic safety authorities have the capability of conducting analysis on Missouri's emergency service vehicle traffic crash problems.

Over the past few years, the ability to analyze Missouri's traffic safety problems using STARS data has been greatly enhanced, in large part, due to the Missouri Traffic Records Committee. This Committee was developed to act as an advisory body to the Missouri State Highway Patrol for upgrading and maintaining STARS.

Finally, the U.S. Department of Transportation, National Highway Traffic Safety Administration, has supported the Statistical Analysis Center's efforts to provide meaningful research services and publications to Missouri traffic safety authorities. Their financial support and technical assistance is appreciated.



Ronald G. Beck, Director  
Statistical Analysis Center  
Missouri State Highway Patrol



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## EXECUTIVE SUMMARY

The purpose of this report is to provide the Missouri State Highway Patrol, the Missouri Division of Highway Safety, and other State and local authorities with information on the problem of emergency service vehicle traffic crashes in the State of Missouri. In 2001, Missouri experienced 1,639 emergency service vehicle traffic crashes. Crashes of this nature are of special concern to traffic safety authorities because emergency service vehicles and, more importantly, their staff are critical public safety resources whose loss due to traffic crashes adversely affects the public welfare.

The primary source of data used in this study was the Missouri Statewide Traffic Accident Records System (STARS).

In 2001, there were 1,639 Missouri traffic crashes involving 1,691 emergency service vehicles. Seven persons were killed and 517 persons were injured in these traffic crashes. Of the 1,691 emergency service vehicles involved, 333 (19.7%) were on an emergency run at the time of the crash. The seriousness of these traffic crashes is compounded by the fact that the incident no doubt delayed or prevented the unit from responding to the original emergency situation.

Police vehicles account for the majority of emergency service vehicles involved in Missouri traffic crashes. Of the 1,691 emergency vehicles involved in 2001 traffic crashes, 1,386 (82.0%) were law enforcement vehicles. This finding is not surprising since there are a significantly greater number of police vehicles in operation compared to ambulances and fire vehicles. In addition, many law enforcement units patrol Missouri roadways throughout their shift, while ambulances and fire vehicles are normally stationed at fixed locations until called to respond to a situation.

Of the 1,691 emergency vehicles involved in 2001 Missouri traffic crashes, 178 (10.5%) were fire vehicles. Although no accurate count is available, the number of fire vehicles in the State is estimated to be larger than the ambulance vehicle population but much less than the police vehicle population. As with ambulances, fire vehicles made up a higher proportion of those vehicles involved in traffic crashes while on emergency runs. Of the 333 vehicles making an emergency run when involved in a traffic crash in 2001, 64 (19.2%) were vehicles of this type.

Of the 1,691 emergency service vehicles involved in 2001 Missouri traffic crashes, 119 (7.0%) were ambulances. Ambulances also made up a higher proportion of emergency service vehicles involved in traffic crashes while making emergency runs. Of the 333 emergency service vehicles involved in 2001 Missouri traffic crashes while on emergency runs, 37 (11.1%) were ambulances.



## INTRODUCTION

This report is one in a series which identifies the magnitude, severity, and characteristics of emergency service vehicles involved in traffic crashes occurring in the State of Missouri. It describes Missouri's emergency service vehicle traffic crash experience in 1998 - 2001 with emphasis on the most recent year (2001).

Missouri traffic safety authorities have expressed an interest in studying these types of incidents for a number of reasons. First, in a sizable portion of these incidents, the emergency service vehicles are responding to other emergency situations. In most instances, their involvement in traffic crashes either delays or totally prevents them from providing the emergency care services being requested. The timeliness of providing their services can be a critical factor in preventing further death, serious injury, and/or property damage in emergency situations.

Second, emergency service vehicles and, more importantly, the staff who operate them are critical public safety resources which the community can ill afford to lose as a result of their involvement in traffic crashes. Costs associated with vehicle replacement or repair are high because these types of vehicles are configured for emergency response (i.e., heavy suspension systems, larger engines, improved braking systems, emergency lights, siren, etc.). Even more significant are losses resulting from qualified emergency service staff being killed or injured in these traffic crashes. The loss of technically trained emergency service manpower reduces the community's capabilities to adequately respond to future emergency situations.

Finally, emergency vehicles involved in traffic crashes can result in death and injury to not only emergency vehicle staff but to other parties involved in the traffic crash.

Data used in this study were obtained from the Missouri Statewide Traffic Accident Records System (STARS). This system is maintained by the Missouri State Highway Patrol (MSHP). In accordance with State statute, law enforcement agencies are required to investigate traffic crashes occurring on public roadways if they involve a death or personal injury or property damage over \$500.00. They submit their findings on a standard traffic accident report form to the STARS system. This standard traffic accident report form contains two fields designed to identify whether the vehicles involved were emergency service vehicles, the type of emergency service vehicle (police, fire, ambulance, or other), and whether or not it was on an emergency run.

Data from the traffic accident report forms are encoded by MSHP staff in computerized files. These files were made available to the MSHP Statistical Analysis Center (SAC) staff who conducted the analysis.

Not all motor vehicle incidents involving damage to emergency service vehicles or injury to its staff were analyzed in this study due to data non-availability. Data on traffic crashes occurring on private property, such as a private driveway, were not attainable for this analysis. In addition, certain incidents are not classified as traffic crashes. For instance, cases where police establish a roadblock and a pursued person uses their vehicle to intentionally ram the blocking police vehicle are not classified as traffic crashes and are not included in this analysis.

The findings from this study are described in the following four sections. The first section provides an overview of Missouri's emergency services traffic crash problem. The second section describes the findings from an analysis which focuses on police vehicle involvement. The third section describes fire vehicle involvement and the last section covers ambulance involvement.



## 1.0 EMERGENCY SERVICE VEHICLE INVOLVEMENT OVERVIEW

*This section presents a series of data displays which describe Missouri's emergency service vehicle traffic crash activity. Traffic crashes involving emergency service vehicles are defined as any crash in which one or more emergency service vehicles were directly involved in the incident. Emergency service vehicles include those assigned to law enforcement agencies, fire departments, and ambulance service agencies. In addition, vehicles operated by other agencies, such as public utilities and public service corporations, are considered emergency vehicles but only when they are actually performing emergency services.*

### SUMMARY OF ANALYSIS

- In 2001 there were 1,639 traffic crashes involving 1,691 emergency service vehicles in the State of Missouri. Seven persons were killed and 517 persons were injured in these traffic crashes. One person was killed or injured every 16.7 hours in these types of crashes in 2001.
- Police vehicles comprise the largest number of emergency service vehicles involved in Missouri's traffic crashes. Of the 1,691 emergency service vehicles involved, 1,386 (82.0%) were police vehicles. They were involved in 1,353 traffic crashes. A total of 333 emergency service vehicles were on emergency runs when the traffic crash occurred. Of these, 224 (67.3%) were police vehicles. Law enforcement officers on-duty annual miles of travel are, no doubt, much greater than other types of emergency service providers. A large proportion of law enforcement officers are assigned to patrol Missouri's roadways throughout their normal shift of operations for crime prevention purposes as well as to provide quick response to calls for services. Normally, fire and ambulance service personnel are stationed at fixed locations from which they respond to emergency situations. In addition, there are larger numbers of police vehicles working Missouri's roadways than either ambulances or fire vehicles. The fact that law enforcement officers' on-duty miles of travel are substantially greater increases their risk of being involved in traffic crashes.
- Fire vehicles were the second most common type of emergency vehicle involved in Missouri's traffic crashes in 2001. Of the 1,691 emergency vehicles involved in 2001 Missouri traffic crashes, 178 (10.5%) were fire vehicles. They were involved in 174 traffic crashes. Of the 333 emergency vehicles on emergency run at the time of the traffic crash, 64 (19.2%) were fire vehicles.
- Ambulances were the third most frequent emergency vehicle type involved in Missouri's 2001 traffic crashes. Of the 1,691 emergency vehicles involved, 119 (7.0%) were ambulances. They were involved in 119 traffic crashes. Like fire vehicles, ambulances were more likely to be involved in a traffic crash when on an emergency run. Of the 333 emergency vehicles on emergency run when the traffic crash occurred, 11.1% were ambulances.
- Emergency vehicles classified as 'Other' made up a small proportion of those involved in Missouri's 2001 traffic crashes. Of the 1,691 emergency vehicles involved, only 8 (0.5%) were emergency vehicles classified as 'Other'.

## 2001 MISSOURI TRAFFIC CRASHES

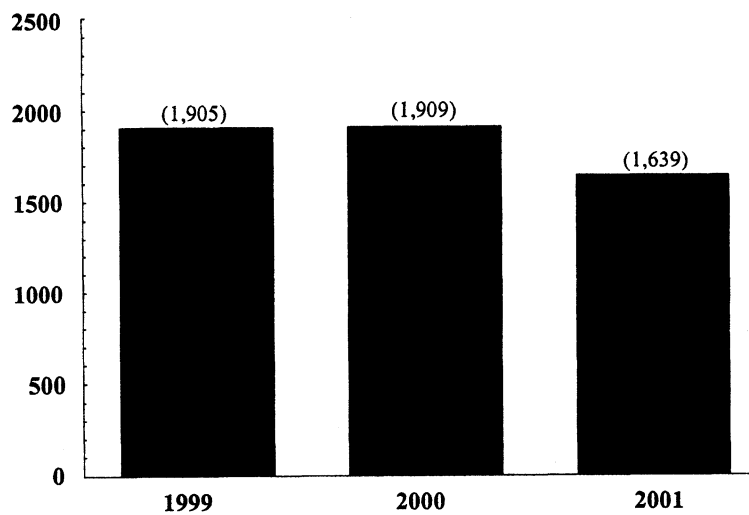
### EMERGENCY SERVICE (ES) VEHICLE INVOLVEMENT

|                        | FATAL      | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL          | %            |
|------------------------|------------|--------------|--------------------|--------------|--------------------|--------------|----------------|--------------|
| ES VEHICLE INVOLVED    | 7          | 0.7          | 312                | 0.7          | 1,320              | 1.0          | 1,639          | 0.9          |
| NO ES VEHICLE INVOLVED | 966        | 99.3         | 48,010             | 99.3         | 138,022            | 99.0         | 186,998        | 99.1         |
| <b>TOTAL</b>           | <b>973</b> | <b>100.0</b> | <b>48,322</b>      | <b>100.0</b> | <b>139,342</b>     | <b>100.0</b> | <b>188,637</b> | <b>100.0</b> |

**TABLE 1.0.1**

### MISSOURI EMERGENCY SERVICE VEHICLE INVOLVED CRASHES

1999 - 2001



**FIGURE 1.0.1**

# MISSOURI EMERGENCY SERVICE VEHICLE PERSONAL INJURY PROBLEM ANALYSIS CLOCK

2001

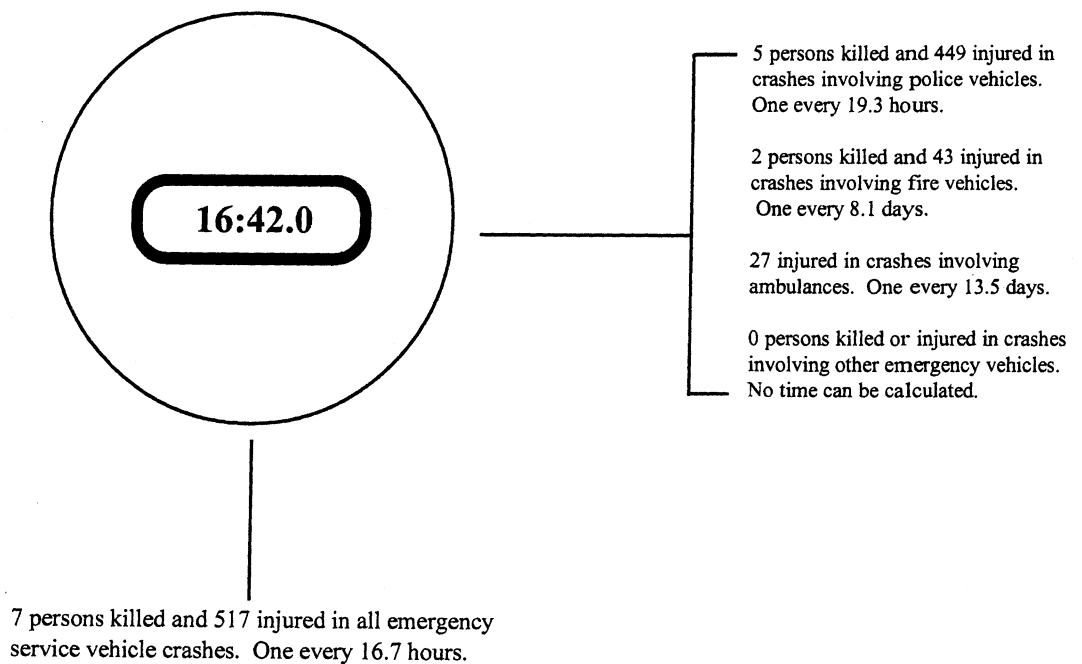


FIGURE 1.0.2



# **2001 MISSOURI EMERGENCY SERVICE (ES) VEHICLE CRASHES**

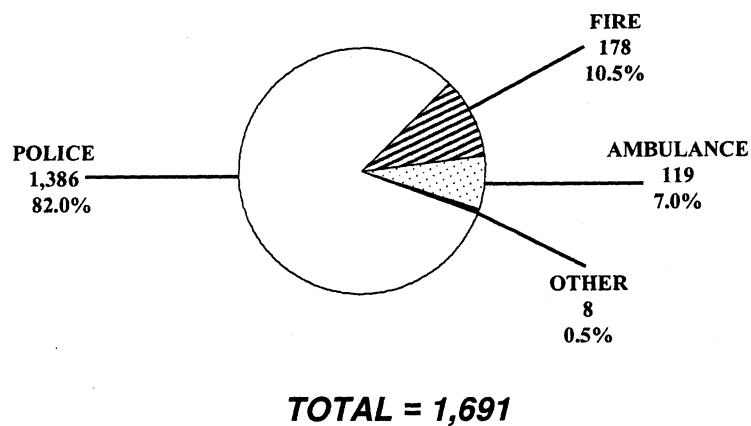
## **TYPE OF EMERGENCY SERVICE VEHICLE INVOLVED**

|   | FATAL    | PERSONAL<br>INJURY | PROPERTY<br>DAMAGE | TOTAL        | NUMBER OF<br>ES VEHICLES<br>INVOLVED <sup>1</sup> |
|---|----------|--------------------|--------------------|--------------|---|
| <b>TOTAL NUMBER OF<br/>ES VEHICLE<br/>CRASHES</b> | <b>7</b> | <b>312</b>         | <b>1,320</b>       | <b>1,639</b> | <b>1,691</b>                                      |
| <b>INVOLVING</b>                                  |          |                    |                    |              |   |
| POLICE VEHICLE                                    | 5        | 270                | 1,078              | 1,353        | 1,386   |
| FIRE VEHICLE                                      | 2        | 28                 | 144                | 174          | 178   |
| AMBULANCE   | 0        | 16                 | 102                | 118          | 119   |
| OTHER ES VEHICLE                                  | 0        | 0                  | 8                  | 8            | 8   |

<sup>1</sup>The number of emergency service vehicles involved does not equal the number of emergency service traffic crashes since there are cases where more than one emergency service vehicle was involved in the same traffic crash. There were 1,639 traffic crashes involving 1,691 emergency service vehicles

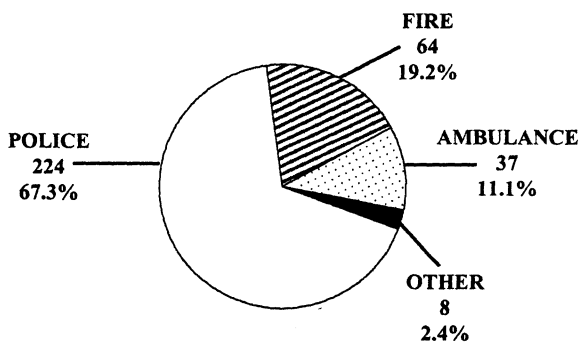
**TABLE 1.0.2**

**TYPE OF EMERGENCY SERVICE VEHICLES INVOLVED IN  
2001 MISSOURI TRAFFIC CRASHES**



**FIGURE 1.0.3**

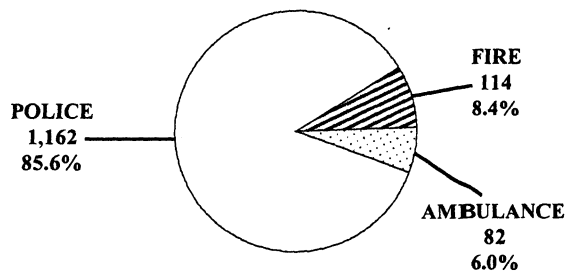
**TYPE OF EMERGENCY SERVICE  
VEHICLES INVOLVED IN 2001 MISSOURI  
TRAFFIC CRASHES WHILE ON  
EMERGENCY RUN**



**TOTAL = 333**

**FIGURE 1.0.4**

**TYPE OF EMERGENCY SERVICE  
VEHICLES INVOLVED IN 2001 MISSOURI  
TRAFFIC CRASHES NOT ON  
EMERGENCY RUN**



**TOTAL = 1,358**

**FIGURE 1.0.5**



## 2.0 POLICE VEHICLE INVOLVEMENT

*This section presents a series of data displays which identify police vehicle involvement in Missouri's traffic crash activity. Police vehicle traffic crashes are defined as any crash in which one or more police vehicles were directly involved in the incident. Data displays also are provided which describe characteristics of the police vehicle drivers involved in these traffic crashes.*

### 2001 SUMMARY ANALYSIS

- In 2001, there were 1,353 traffic crashes involving one or more police vehicles in the State of Missouri. Five persons were killed and 449 were injured in these crashes.
- In 16.0% of the traffic crashes involving police vehicles, the police vehicle was on an emergency run at the time of the incident.
- In 2001, one person was killed or injured in a police vehicle related crash every 19.3 hours in the State of Missouri.
- Of all 2001 crashes involving police vehicles, the first harmful event in 53.3% of the cases involved one motor vehicle in transport striking another motor vehicle in transport. In 16.6% of the cases, it involved a motor vehicle striking a fixed object. In 13.5% of the cases, the vehicle struck a parked vehicle.
- Of all 2001 crashes involving police vehicles, 59.9% occurred in an urban area of the State and 40.1% occurred in a rural area.
- Of all police vehicle drivers involved in 2001 traffic crashes, 90.3% were male and 9.7% were female. The average age of the police vehicle driver was 33.4 years.
- There were 1,386 police vehicles involved in the 1,353 traffic crashes in the State. Of these, 1,272 or 92.0% were automobiles.

# 2001 POLICE VEHICLE INVOLVED CRASHES

## EMERGENCY RUN STATUS

|                              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL        | %            | TOTAL NUMBER <sup>1</sup> |            | POLICE VEHICLE<br>DRIVERS/PASSENGERS <sup>2</sup> |            |
|------------------------------|----------|--------------|--------------------|--------------|--------------------|--------------|--------------|--------------|---------------------------|------------|---|------------|
|                              | KILLED   | INJURED      | KILLED             | INJURED      |                    |              |              |              |                           |            |   |            |
| POLICE VEHICLE<br>ON RUN     | 1        | 20.0         | 54                 | 20.0         | 161                | 14.9         | 216          | 16.0         | 1                         | 97         | 1   | 51         |
| POLICE VEHICLE<br>NOT ON RUN | 4        | 80.0         | 216                | 80.0         | 917                | 85.1         | 1,137        | 84.0         | 4                         | 352        | 1   | 191        |
| <b>TOTAL</b>                 | <b>5</b> | <b>100.0</b> | <b>270</b>         | <b>100.0</b> | <b>1,078</b>       | <b>100.0</b> | <b>1,353</b> | <b>100.0</b> | <b>5</b>                  | <b>449</b> | <b>2</b>  | <b>242</b> |

<sup>1</sup>This statistic indicates the total number of persons killed and injured in a crash where one or more police vehicles were involved.

<sup>2</sup>This statistic indicates the number of police vehicle drivers and passengers killed and injured.

**TABLE 2.0.1**

## 2000 and 2001 POLICE VEHICLE INVOLVED CRASH ANALYSIS

|                 | 2000  | 2001  | RATE OF CHANGE |
|-----------------|-------|-------|----------------|
| FATAL           | 3     | 5     | + 66.7         |
| PERSONAL INJURY | 329   | 270   | - 17.9         |
| PROPERTY DAMAGE | 1,216 | 1,078 | - 11.3         |
| TOTAL           | 1,548 | 1,353 | - 12.6         |

**TABLE 2.0.2**

## 2001 POLICE VEHICLE INVOLVED CRASHES

### CRASH TYPE BY CRASH SEVERITY

|                          | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL        | %            |
|--------------------------|----------|--------------|--------------------|--------------|--------------------|--------------|--------------|--------------|
| ANIMAL                   | 0        | 0.0          | 6                  | 2.2          | 143                | 13.3         | 149          | 11.0         |
| BICYCLIST                | 0        | 0.0          | 1                  | 0.4          | 2                  | 0.2          | 3            | 0.2          |
| FIXED OBJECT             | 1        | 20.0         | 28                 | 10.4         | 196                | 18.2         | 225          | 16.6         |
| OTHER OBJECT             | 0        | 0.0          | 1                  | 0.4          | 44                 | 4.1          | 45           | 3.3          |
| PEDESTRIAN               | 1        | 20.0         | 8                  | 3.0          | 2                  | 0.2          | 11           | 0.8          |
| TRAIN                    | 0        | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0            | 0.0          |
| VEHICLE IN TRANSPORT     | 3        | 60.0         | 210                | 77.8         | 508                | 47.1         | 721          | 53.3         |
| VEHICLE ON OTHER ROADWAY | 0        | 0.0          | 2                  | 0.7          | 1                  | 0.1          | 3            | 0.2          |
| PARKED VEHICLE           | 0        | 0.0          | 11                 | 4.1          | 171                | 15.9         | 182          | 13.5         |
| NON-COLLISION OVERTURN   | 0        | 0.0          | 1                  | 0.4          | 1                  | 0.1          | 2            | 0.2          |
| NON-COLLISION OTHER      | 0        | 0.0          | 2                  | 0.7          | 10                 | 0.9          | 12           | 0.9          |
| <b>TOTAL</b>             | <b>5</b> | <b>100.0</b> | <b>270</b>         | <b>100.0</b> | <b>1,078</b>       | <b>100.0</b> | <b>1,353</b> | <b>100.0</b> |

**TABLE 2.0.3**

## 2001 POLICE VEHICLE INVOLVED CRASHES

### AREA CLASSIFICATION BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL        | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|--------------|--------------|
| URBAN        | 0        | 0.0          | 188                | 69.6         | 623                | 57.8         | 811          | 59.9         |
| RURAL        | 5        | 100.0        | 82                 | 30.4         | 455                | 42.2         | 542          | 40.1         |
| <b>TOTAL</b> | <b>5</b> | <b>100.0</b> | <b>270</b>         | <b>100.0</b> | <b>1,078</b>       | <b>100.0</b> | <b>1,353</b> | <b>100.0</b> |

**TABLE 2.0.4**

## 2001 POLICE VEHICLE INVOLVED CRASHES

### ROAD CURVATURE BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL        | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|--------------|--------------|
| STRAIGHT     | 5        | 100.0        | 241                | 89.9         | 919                | 85.8         | 1,165        | 86.7         |
| CURVE        | 0        | 0.0          | 27                 | 10.1         | 152                | 14.2         | 179          | 13.3         |
| UNKNOWN      | 0        | -            | 2                  | -            | 7                  | -            | 9            | -            |
| <b>TOTAL</b> | <b>5</b> | <b>100.0</b> | <b>270</b>         | <b>100.0</b> | <b>1,078</b>       | <b>100.0</b> | <b>1,353</b> | <b>100.0</b> |

**TABLE 2.0.5**

## 2001 POLICE VEHICLE INVOLVED CRASHES

### ROAD INCLINE BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL        | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|--------------|--------------|
| LEVEL        | 2        | 40.0         | 162                | 60.7         | 699                | 65.5         | 863          | 64.5         |
| HILL         | 2        | 40.0         | 101                | 37.8         | 350                | 32.8         | 453          | 33.8         |
| CREST        | 1        | 20.0         | 4                  | 1.5          | 18                 | 1.7          | 23           | 1.7          |
| UNKNOWN      | 0        | -            | 3                  | -            | 11                 | -            | 14           | -            |
| <b>TOTAL</b> | <b>5</b> | <b>100.0</b> | <b>270</b>         | <b>100.0</b> | <b>1,078</b>       | <b>100.0</b> | <b>1,353</b> | <b>100.0</b> |

**TABLE 2.0.6**

## 2001 POLICE VEHICLE INVOLVED CRASHES

### ROAD CONDITIONS BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL        | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|--------------|--------------|
| DRY          | 4        | 80.0         | 220                | 81.5         | 854                | 79.6         | 1,078        | 80.0         |
| WET          | 1        | 20.0         | 42                 | 15.5         | 165                | 15.4         | 208          | 15.4         |
| SNOW         | 0        | 0.0          | 0                  | 0.0          | 14                 | 1.3          | 14           | 1.0          |
| ICE          | 0        | 0.0          | 8                  | 3.0          | 36                 | 3.4          | 44           | 3.3          |
| MUD          | 0        | 0.0          | 0                  | 0.0          | 4                  | 0.4          | 4            | 0.3          |
| UNKNOWN      | 0        | -            | 0                  | -            | 5                  | -            | 5            | -            |
| <b>TOTAL</b> | <b>5</b> | <b>100.0</b> | <b>270</b>         | <b>100.0</b> | <b>1,078</b>       | <b>100.0</b> | <b>1,353</b> | <b>100.0</b> |

**TABLE 2.0.7**

## 2001 POLICE VEHICLE INVOLVED CRASHES

### HIGHWAY CLASSIFICATION BY CRASH SEVERITY

|                       | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL        | %            |
|-----------------------|----------|--------------|--------------------|--------------|--------------------|--------------|--------------|--------------|
| INTERSTATE            | 1        | 20.0         | 24                 | 8.9          | 111                | 10.3         | 136          | 10.1         |
| U.S. HIGHWAY          | 0        | 0.0          | 25                 | 9.3          | 87                 | 8.1          | 112          | 8.3          |
| STATE NUMBERED        | 3        | 60.0         | 41                 | 15.2         | 143                | 13.3         | 187          | 13.8         |
| SINGLE STATE LETTERED | 0        | 0.0          | 18                 | 6.7          | 60                 | 5.6          | 78           | 5.8          |
| DOUBLE STATE LETTERED | 0        | 0.0          | 3                  | 1.1          | 26                 | 2.4          | 29           | 2.1          |
| OUTER ROAD            | 0        | 0.0          | 2                  | 0.7          | 3                  | 0.3          | 5            | 0.4          |
| COUNTY ROAD           | 1        | 20.0         | 18                 | 6.7          | 111                | 10.3         | 130          | 9.6          |
| CITY STREET           | 0        | 0.0          | 137                | 50.7         | 492                | 45.6         | 629          | 46.5         |
| INTERSTATE LOOP       | 0        | 0.0          | 2                  | 0.7          | 1                  | 0.1          | 3            | 0.2          |
| OTHER <sup>1</sup>    | 0        | 0.0          | 0                  | 0.0          | 44                 | 4.1          | 44           | 3.3          |
| <b>TOTAL</b>          | <b>5</b> | <b>100.0</b> | <b>270</b>         | <b>100.0</b> | <b>1,078</b>       | <b>100.0</b> | <b>1,353</b> | <b>100.0</b> |

<sup>1</sup> "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

**TABLE 2.0.8**



# 2001 POLICE VEHICLE INVOLVED CRASHES

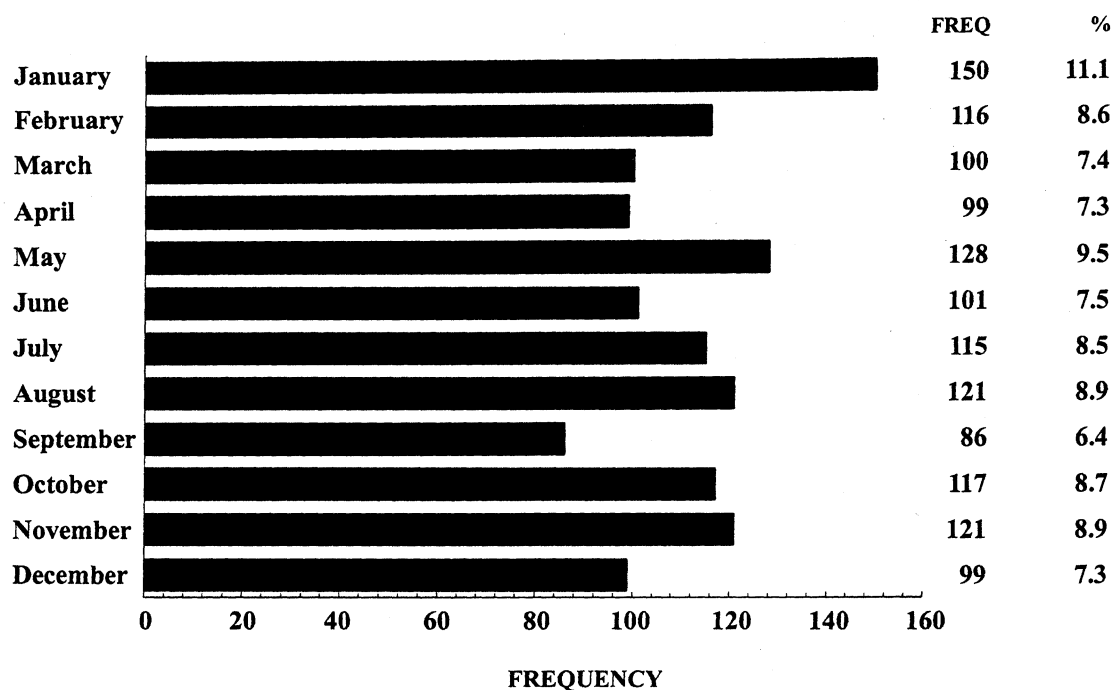
## HIGHWAY CLASSIFICATION BY AREA CLASSIFICATION AND CRASH SEVERITY

|                          | URBAN    |            |                    |              |                    |              |            |              | RURAL    |              |                    |              |                    |              |            |              |
|--------------------------|----------|------------|--------------------|--------------|--------------------|--------------|------------|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|------------|--------------|
|                          | FATAL    | %          | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
| INTERSTATE               | 0        | 0.0        | 16                 | 8.5          | 53                 | 8.5          | 69         | 8.5          | 1        | 20.0         | 8                  | 9.8          | 58                 | 12.8         | 67         | 12.4         |
| U.S. HIGHWAY             | 0        | 0.0        | 8                  | 4.3          | 35                 | 5.6          | 43         | 5.3          | 0        | 0.0          | 17                 | 20.7         | 52                 | 11.4         | 69         | 12.7         |
| STATE NUMBERED           | 0        | 0.0        | 21                 | 11.2         | 48                 | 7.7          | 69         | 8.5          | 3        | 60.0         | 20                 | 24.4         | 95                 | 20.9         | 118        | 21.8         |
| SINGLE STATE<br>LETTERED | 0        | 0.0        | 4                  | 2.1          | 4                  | 0.6          | 8          | 1.0          | 0        | 0.0          | 14                 | 17.1         | 56                 | 12.3         | 70         | 12.9         |
| DOUBLE STATE<br>LETTERED | 0        | 0.0        | 1                  | 0.5          | 0                  | 0.0          | 1          | 0.1          | 0        | 0.0          | 2                  | 2.4          | 26                 | 5.7          | 28         | 5.2          |
| OUTER ROAD               | 0        | 0.0        | 1                  | 0.5          | 2                  | 0.3          | 3          | 0.4          | 0        | 0.0          | 1                  | 1.2          | 1                  | 0.2          | 2          | 0.4          |
| COUNTY ROAD              | 0        | 0.0        | 8                  | 4.3          | 23                 | 3.7          | 31         | 3.8          | 1        | 20.0         | 10                 | 12.2         | 88                 | 19.3         | 99         | 18.3         |
| CITY STREET              | 0        | 0.0        | 127                | 67.6         | 424                | 68.1         | 551        | 67.9         | 0        | 0.0          | 10                 | 12.2         | 68                 | 15.0         | 78         | 14.4         |
| INTERSTATE LOOP          | 0        | 0.0        | 2                  | 1.1          | 1                  | 0.2          | 3          | 0.4          | 0        | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0          | 0.0          |
| OTHER <sup>1</sup>       | 0        | 0.0        | 0                  | 0.0          | 33                 | 5.3          | 33         | 4.1          | 0        | 0.0          | 0                  | 0.0          | 11                 | 2.4          | 11         | 2.0          |
| <b>TOTAL</b>             | <b>0</b> | <b>0.0</b> | <b>188</b>         | <b>100.0</b> | <b>623</b>         | <b>100.0</b> | <b>811</b> | <b>100.0</b> | <b>5</b> | <b>100.0</b> | <b>82</b>          | <b>100.0</b> | <b>455</b>         | <b>100.0</b> | <b>542</b> | <b>100.0</b> |

<sup>1</sup>"Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

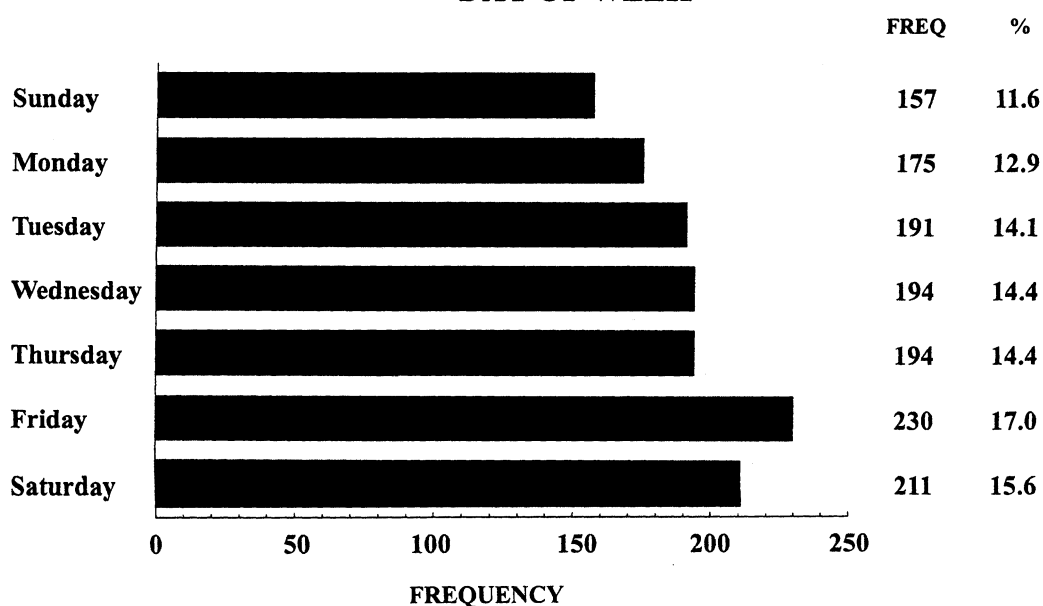
TABLE 2.0.9

# **2001 POLICE VEHICLE INVOLVED CRASHES MONTH OF YEAR**



**FIGURE 2.0.1**

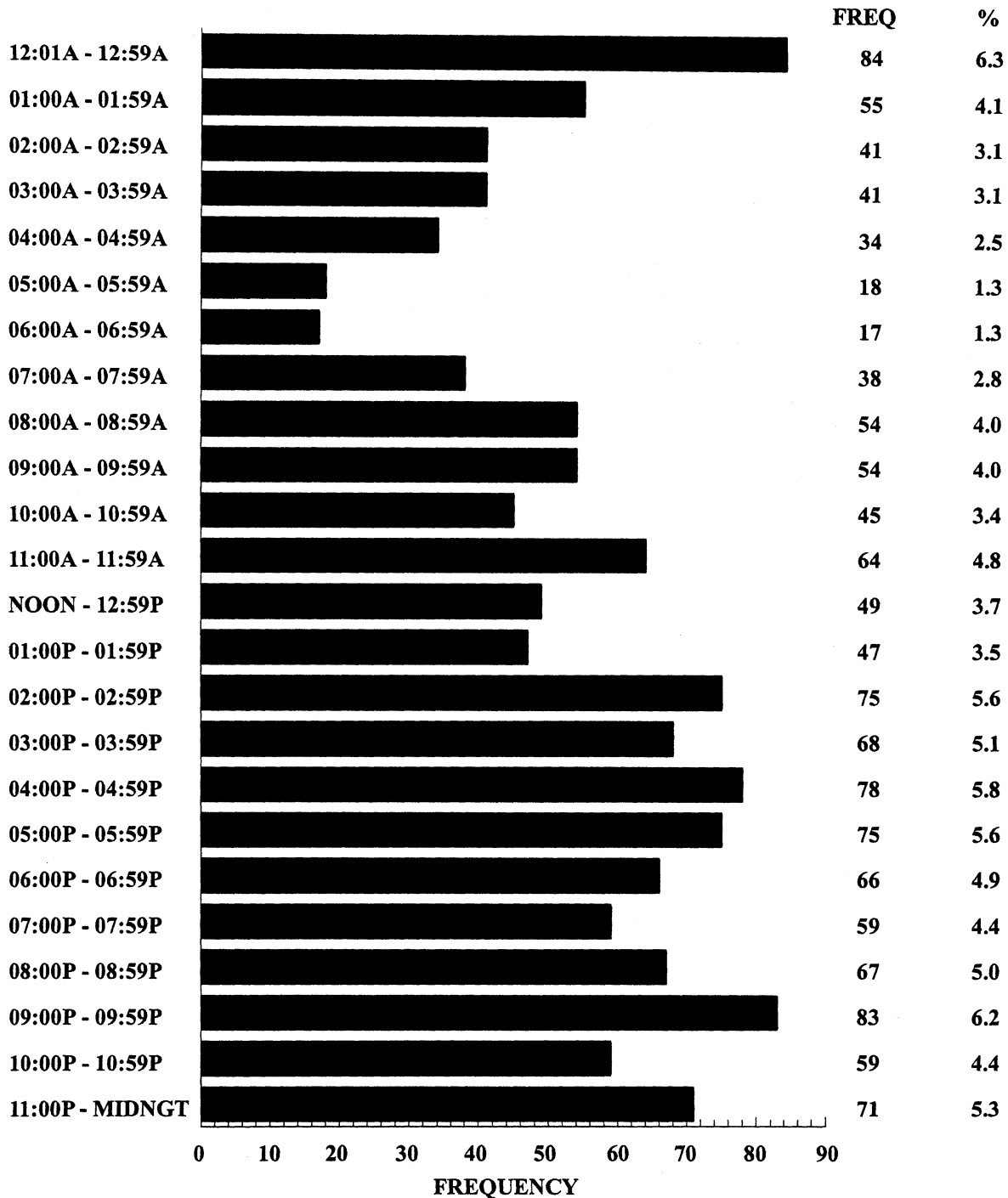
# **2001 POLICE VEHICLE INVOLVED CRASHES DAY OF WEEK**



**FIGURE 2.0.2**

Unknown Data Not Included

# **2001 POLICE VEHICLE INVOLVED CRASHES HOUR OF DAY**



**FIGURE 2.0.3**

Unknown Data Not Included

## 2001 MISSOURI POLICE VEHICLE CRASHES

### TYPE OF CIRCUMSTANCE INVOLVED BY CRASH SEVERITY AND PERSON CLASSIFICATION<sup>1</sup>

| FATAL AND PERSONAL INJURY<br>POLICE VEHICLE CRASHES = 275 |  |   |                 | TOTAL POLICE VEHICLE<br>CRASHES = 1,353    |   |                  |
|---|--|---|-----------------|--|---|------------------|
|   | DRIVER OF<br>POLICE<br>VEHICLE/<br>VEHICLE | OTHER DRIVER/<br>VEHICLE/<br>PEDESTRIAN | TOTAL<br>F & PI | DRIVER OF<br>POLICE<br>VEHICLE/<br>VEHICLE | OTHER DRIVER/<br>VEHICLE/<br>PEDESTRIAN | TOTAL<br>CRASHES |
| VEHICLE DEFECTS   | 0.7  | 0.0                                     | 0.7             | 1.0  | 1.4                                     | 2.4              |
| ACCIDENT AHEAD  | 0.4  | 1.5                                     | 1.8             | 0.5  | 1.0                                     | 1.3              |
| CONGESTION AHEAD  | 3.6  | 3.6                                     | 6.2             | 3.0  | 2.3                                     | 4.2              |
| EXCEEDING SPEED LIMIT /<br>TOO FAST FOR CONDITIONS        | 10.2                                       | 12.4                                    | 22.4            | 8.0  | 5.7                                     | 13.5             |
| IMPROPER PASSING  | 0.7  | 0.7                                     | 1.4             | 0.4  | 0.7                                     | 1.1              |
| VIOLATION OF STOP SIGN                                    | 1.8  | 9.8                                     | 11.6            | 0.7  | 3.3                                     | 4.0              |
| WRONG SIDE NOT PASSING                                    | 0.0  | 1.8                                     | 1.8             | 0.4  | 0.7                                     | 1.0              |
| FOLLOWING TOO CLOSE                                       | 0.7  | 4.7                                     | 5.4             | 1.2  | 2.4                                     | 3.5              |
| IMPROPER SIGNAL   | 0.0  | 0.0                                     | 0.0             | 0.1  | 0.2                                     | 0.3              |
| IMPROPER BACKING  | 0.7  | 0.4                                     | 1.1             | 1.5  | 4.4                                     | 5.8              |
| IMPROPER TURN   | 1.1  | 5.1                                     | 6.2             | 1.0  | 2.3                                     | 3.3              |
| IMPROPER LANE USAGE /<br>CHANGE                           | 1.1  | 4.7                                     | 5.8             | 0.9  | 3.5                                     | 4.3              |
| WRONG WAY ONE-WAY STREET                                  | 0.4  | 0.4                                     | 0.7             | 0.1  | 0.1                                     | 0.2              |
| IMPROPER START FROM PARK                                  | 0.0  | 0.0                                     | 0.0             | 0.1  | 0.2                                     | 0.3              |
| IMPROPERLY PARKED   | 0.4  | 0.0                                     | 0.4             | 0.5  | 0.7                                     | 1.2              |
| FAILED TO YIELD   | 5.5  | 25.8                                    | 30.5            | 3.3  | 13.0                                    | 16.0             |
| DRINKING  | 1.1  | 9.5                                     | 10.5            | 0.4  | 4.7                                     | 5.1              |
| DRUGS   | 0.0  | 0.7                                     | 0.7             | 0.1  | 0.7                                     | 0.7              |
| PHYSICAL IMPAIRMENT                                       | 1.1  | 0.7                                     | 1.8             | 0.4  | 0.7                                     | 1.0              |
| INATTENTION   | 19.3                                       | 42.2                                    | 57.8            | 22.8                                       | 29.7                                    | 50.6             |

<sup>1</sup>This table identifies the percentage of crashes involving one or more police vehicles having a specific type of circumstance which contributed to the cause of the crash. This table further defines the percentage of crashes where the contributing circumstance was associated with the driver or his police vehicle as well as those attributed to other persons and vehicles in the crash. For instance, when examining speed involvement in 2001 Missouri police vehicle crashes, it was found that a police vehicle driver was speeding in 8.0% of the crashes. In 5.7% of the crashes another driver was speeding. In 13.5% of the crashes either a police vehicle driver, another driver, or both drivers were speeding.

**TABLE 2.0.10**

**POLICE VEHICLES INVOLVED IN 2001 MISSOURI CRASHES**

**TYPE OF VEHICLE BY CRASH SEVERITY**

|                           | <b>FATAL</b> | <b>%</b>     | <b>PERSONAL<br/>INJURY</b> | <b>%</b>     | <b>PROPERTY<br/>DAMAGE</b> | <b>%</b>     | <b>TOTAL</b> | <b>%</b>     |
|---------------------------|--------------|--------------|----------------------------|--------------|----------------------------|--------------|--------------|--------------|
| AUTOMOBILE                | 4            | 80.0         | 259                        | 91.5         | 1,009                      | 92.2         | 1,272        | 92.0         |
| SPORT UTILITY<br>VEHICLE  | 1            | 20.0         | 5                          | 1.8          | 25                         | 2.3          | 31           | 2.2          |
| VAN / SMALL BUS           | 0            | 0.0          | 7                          | 2.5          | 32                         | 2.9          | 39           | 2.8          |
| MOTORCYCLE                | 0            | 0.0          | 8                          | 2.8          | 0                          | 0.0          | 8            | 0.6          |
| OTHER TRANSPORT<br>DEVICE | 0            | 0.0          | 0                          | 0.0          | 1                          | 0.1          | 1            | 0.1          |
| PICK-UP TRUCK             | 0            | 0.0          | 4                          | 1.4          | 22                         | 2.0          | 26           | 1.9          |
| OTHER TRUCK               | 0            | 0.0          | 0                          | 0.0          | 5                          | 0.5          | 5            | 0.4          |
| UNKNOWN                   | 0            | -            | 0                          | -            | 4                          | -            | 4            | -            |
| <b>TOTAL</b>              | <b>5</b>     | <b>100.0</b> | <b>283</b>                 | <b>100.0</b> | <b>1,098</b>               | <b>100.0</b> | <b>1,386</b> | <b>100.0</b> |

**TABLE 2.0.11**

**POLICE VEHICLES INVOLVED IN 2001 MISSOURI CRASHES**

**DRIVER INVOLVEMENT BY CRASH SEVERITY**

|                            | <b>FATAL</b> | <b>%</b>     | <b>PERSONAL<br/>INJURY</b> | <b>%</b>     | <b>PROPERTY<br/>DAMAGE</b> | <b>%</b>     | <b>TOTAL</b> | <b>%</b>     |
|----------------------------|--------------|--------------|----------------------------|--------------|----------------------------|--------------|--------------|--------------|
| DRIVERLESS                 | 0            | 0.0          | 12                         | 4.2          | 144                        | 13.1         | 156          | 11.3         |
| KNOWN DRIVER<br>INVOLVED   | 5            | 100.0        | 270                        | 95.4         | 951                        | 86.6         | 1,226        | 88.4         |
| UNKNOWN DRIVER<br>INVOLVED | 0            | 0.0          | 1                          | 0.4          | 3                          | 0.3          | 4            | 0.3          |
| <b>TOTAL</b>               | <b>5</b>     | <b>100.0</b> | <b>283</b>                 | <b>100.0</b> | <b>1,098</b>               | <b>100.0</b> | <b>1,386</b> | <b>100.0</b> |

**TABLE 2.0.12**

# DRIVERS OF POLICE VEHICLES INVOLVED IN 2001 MISSOURI CRASHES

## SEX OF DRIVER BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL        | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|--------------|--------------|
| MALE         | 5        | 100.0        | 235                | 87.0         | 867                | 91.2         | 1,107        | 90.3         |
| FEMALE       | 0        | 0.0          | 35                 | 13.0         | 84                 | 8.8          | 119          | 9.7          |
| UNKNOWN      | 0        | -            | 1                  | -            | 3                  | -            | 4            | -            |
| <b>TOTAL</b> | <b>5</b> | <b>100.0</b> | <b>271</b>         | <b>100.0</b> | <b>954</b>         | <b>100.0</b> | <b>1,230</b> | <b>100.0</b> |

TABLE 2.0.13

# DRIVERS OF POLICE VEHICLES INVOLVED IN 2001 MISSOURI CRASHES

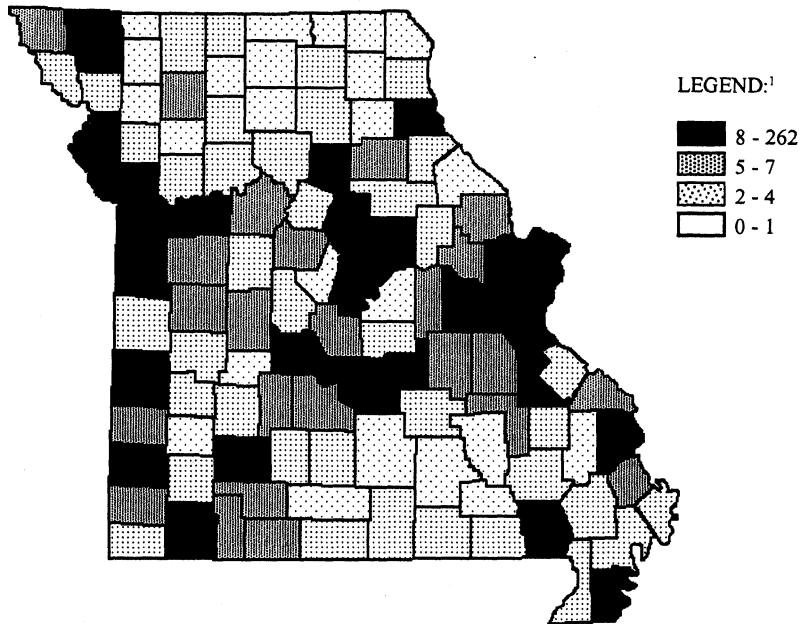
## AGE OF DRIVER BY CRASH SEVERITY

|                                  | FATAL       | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL        | %            |
|----------------------------------|-------------|--------------|--------------------|--------------|--------------------|--------------|--------------|--------------|
| <b>AVERAGE AGE<br/>OF DRIVER</b> | <b>38.6</b> | <b>-</b>     | <b>33.4</b>        | <b>-</b>     | <b>33.4</b>        | <b>-</b>     | <b>33.4</b>  | <b>-</b>     |
| 15 YEARS AND UNDER               | 0           | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0            | 0.0          |
| 16 - 20 YEARS                    | 0           | 0.0          | 5                  | 1.9          | 4                  | 0.4          | 9            | 0.7          |
| 21 - 25 YEARS                    | 0           | 0.0          | 37                 | 13.8         | 141                | 15.0         | 178          | 14.6         |
| 26 - 30 YEARS                    | 1           | 20.0         | 81                 | 30.1         | 296                | 31.4         | 378          | 31.1         |
| 31 - 35 YEARS                    | 1           | 20.0         | 60                 | 22.3         | 200                | 21.2         | 261          | 21.5         |
| 36 - 40 YEARS                    | 1           | 20.0         | 34                 | 12.6         | 119                | 12.6         | 154          | 12.7         |
| 41 - 45 YEARS                    | 1           | 20.0         | 21                 | 7.8          | 81                 | 8.6          | 103          | 8.5          |
| 46 - 50 YEARS                    | 0           | 0.0          | 13                 | 4.8          | 55                 | 5.8          | 68           | 5.6          |
| 51 - 55 YEARS                    | 1           | 20.0         | 10                 | 3.7          | 29                 | 3.1          | 40           | 3.3          |
| 56 - 60 YEARS                    | 0           | 0.0          | 5                  | 1.9          | 9                  | 1.0          | 14           | 1.2          |
| 61 - 65 YEARS                    | 0           | 0.0          | 3                  | 1.1          | 5                  | 0.5          | 8            | 0.7          |
| 66 YEARS AND OVER                | 0           | 0.0          | 0                  | 0.0          | 4                  | 0.4          | 4            | 0.3          |
| UNKNOWN                          | 0           | -            | 2                  | -            | 11                 | -            | 13           | -            |
| <b>TOTAL</b>                     | <b>5</b>    | <b>100.0</b> | <b>271</b>         | <b>100.0</b> | <b>954</b>         | <b>100.0</b> | <b>1,230</b> | <b>100.0</b> |

TABLE 2.0.14

## 2001 POLICE VEHICLE INVOLVED CRASHES

### COUNTY QUARTILE ANALYSIS



<sup>1</sup> LEGEND CATEGORIES ARE BASED ON QUARTILES OF COUNTIES.

| RANK | COUNTY         | FREQUENCY | PERCENT | RANK            | COUNTY   | FREQUENCY | PERCENT |
|------|----------------|-----------|---------|-----------------|----------|-----------|---------|
| 1.0  | JACKSON        | 262       | 19.4    | 22.0            | BUTLER   | 10        | 0.7     |
| 2.0  | ST. LOUIS      | 216       | 16.0    | 22.0            | CALLAWAY | 10        | 0.7     |
| 3.0  | ST. LOUIS CITY | 138       | 10.2    | 22.0            | VERNON   | 10        | 0.7     |
| 4.0  | ST. CHARLES    | 60        | 4.4     | 25.0            | BUCHANAN | 9         | 0.7     |
| 5.0  | GREENE         | 50        | 3.7     | 25.0            | PEMISCOT | 9         | 0.7     |
| 6.0  | JEFFERSON      | 41        | 3.0     | 25.0            | PULASKI  | 9         | 0.7     |
| 7.0  | CLAY           | 40        | 3.0     | 27.5            | MARION   | 8         | 0.6     |
| 8.0  | PLATTE         | 31        | 2.3     | 27.5            | NODAWAY  | 8         | 0.6     |
| 9.0  | JASPER         | 21        | 1.6     | First Quartile  |          |           |         |
| 10.5 | CAPE GIRARDEAU | 16        | 1.2     | -----           |          |           |         |
| 10.5 | FRANKLIN       | 16        | 1.2     | Second Quartile |          |           |         |
| 12.5 | BOONE          | 15        | 1.1     | 32.5            | BENTON   | 7         | 0.5     |
| 12.5 | COLE           | 15        | 1.1     | 32.5            | HENRY    | 7         | 0.5     |
| 14.0 | BARRY          | 14        | 1.0     | 32.5            | IRON     | 7         | 0.5     |
| 15.5 | RANDOLPH       | 13        | 1.0     | 32.5            | JOHNSON  | 7         | 0.5     |
| 15.5 | ST. FRANCOIS   | 13        | 1.0     | 32.5            | LINCOLN  | 7         | 0.5     |
| 18.0 | CASS           | 12        | 0.9     | 32.5            | STONE    | 7         | 0.5     |
| 18.0 | LAFAYETTE      | 12        | 0.9     | 32.5            | TANEY    | 7         | 0.5     |
| 18.0 | PHELPS         | 12        | 0.9     | 32.5            | WARREN   | 7         | 0.5     |
| 20.0 | CAMDEN         | 11        | 0.8     | 40.0            | DALLAS   | 6         | 0.4     |

| RANK            | COUNTY      | FREQUENCY | PERCENT | RANK            | COUNTY         | FREQUENCY | PERCENT |
|-----------------|-------------|-----------|---------|-----------------|----------------|-----------|---------|
| 40.0            | DAVIESS     | 6         | 0.4     | 71.5            | WRIGHT         | 3         | 0.2     |
| 40.0            | GASCONADE   | 6         | 0.4     | 84.5            | ADAIR          | 2         | 0.1     |
| 40.0            | MILLER      | 6         | 0.4     | 84.5            | CHARITON       | 2         | 0.1     |
| 40.0            | NEWTON      | 6         | 0.4     | 84.5            | DENT           | 2         | 0.1     |
| 40.0            | SALINE      | 6         | 0.4     | 84.5            | DUNKLIN        | 2         | 0.1     |
| 40.0            | WASHINGTON  | 6         | 0.4     | 84.5            | HOLT           | 2         | 0.1     |
| 48.0            | ATCHISON    | 5         | 0.4     | 84.5            | LAWRENCE       | 2         | 0.1     |
| 48.0            | BARTON      | 5         | 0.4     | 84.5            | LEWIS          | 2         | 0.1     |
| 48.0            | CHRISTIAN   | 5         | 0.4     | 84.5            | MACON          | 2         | 0.1     |
| 48.0            | COOPER      | 5         | 0.4     | 84.5            | MADISON        | 2         | 0.1     |
| 48.0            | CRAWFORD    | 5         | 0.4     | 84.5            | MARIES         | 2         | 0.1     |
| 48.0            | LACLEDE     | 5         | 0.4     | 84.5            | MERCER         | 2         | 0.1     |
| 48.0            | MONROE      | 5         | 0.4     | 84.5            | RALLS          | 2         | 0.1     |
| 48.0            | PERRY       | 5         | 0.4     | 84.5            | STE. GENEVIEVE | 2         | 0.1     |
| 48.0            | SCOTT       | 5         | 0.4     | 84.5            | WAYNE          | 2         | 0.1     |
| Second Quartile |             |           |         | Third Quartile  |                |           |         |
| Third Quartile  |             |           |         | Fourth Quartile |                |           |         |
| 59.0            | AUDRAIN     | 4         | 0.3     | 98.0            | BOLLINGER      | 1         | 0.1     |
| 59.0            | CARROLL     | 4         | 0.3     | 98.0            | CALDWELL       | 1         | 0.1     |
| 59.0            | CEDAR       | 4         | 0.3     | 98.0            | CLARK          | 1         | 0.1     |
| 59.0            | HARRISON    | 4         | 0.3     | 98.0            | DE KALB        | 1         | 0.1     |
| 59.0            | LIVINGSTON  | 4         | 0.3     | 98.0            | DOUGLAS        | 1         | 0.1     |
| 59.0            | MC DONALD   | 4         | 0.3     | 98.0            | GENTRY         | 1         | 0.1     |
| 59.0            | MISSISSIPPI | 4         | 0.3     | 98.0            | GRUNDY         | 1         | 0.1     |
| 59.0            | MONTGOMERY  | 4         | 0.3     | 98.0            | MONITEAU       | 1         | 0.1     |
| 59.0            | MORGAN      | 4         | 0.3     | 98.0            | PUTNAM         | 1         | 0.1     |
| 59.0            | NEW MADRID  | 4         | 0.3     | 98.0            | SHANNON        | 1         | 0.1     |
| 59.0            | OREGON      | 4         | 0.3     | 98.0            | SHELBY         | 1         | 0.1     |
| 59.0            | RIPLEY      | 4         | 0.3     | 98.0            | SULLIVAN       | 1         | 0.1     |
| 59.0            | WEBSTER     | 4         | 0.3     | 98.0            | TEXAS          | 1         | 0.1     |
| 71.5            | ANDREW      | 3         | 0.2     | 110.0           | CARTER         | 0         | 0.0     |
| 71.5            | BATES       | 3         | 0.2     | 110.0           | DADE           | 0         | 0.0     |
| 71.5            | CLINTON     | 3         | 0.2     | 110.0           | HICKORY        | 0         | 0.0     |
| 71.5            | HOWARD      | 3         | 0.2     | 110.0           | KNOX           | 0         | 0.0     |
| 71.5            | HOWELL      | 3         | 0.2     | 110.0           | LINN           | 0         | 0.0     |
| 71.5            | OZARK       | 3         | 0.2     | 110.0           | OSAGE          | 0         | 0.0     |
| 71.5            | PETTIS      | 3         | 0.2     | 110.0           | PIKE           | 0         | 0.0     |
| 71.5            | POLK        | 3         | 0.2     | 110.0           | REYNOLDS       | 0         | 0.0     |
| 71.5            | RAY         | 3         | 0.2     | 110.0           | SCHUYLER       | 0         | 0.0     |
| 71.5            | ST. CLAIR   | 3         | 0.2     | 110.0           | SCOTLAND       | 0         | 0.0     |
| 71.5            | STODDARD    | 3         | 0.2     | 110.0           | WORTH          | 0         | 0.0     |

TABLE 2.0.15





### 3.0 FIRE VEHICLE INVOLVEMENT

*This section presents a series of data displays which identify fire vehicle involvement in Missouri's traffic crash activity. Fire vehicle traffic crashes are defined as any crash in which one or more fire vehicles were directly involved in the incident. Data displays also are provided which describe characteristics of the fire vehicle drivers involved in these traffic crashes.*

#### 2001 SUMMARY ANALYSIS

- In 2001, there were 174 traffic crashes involving one or more fire vehicles in the State of Missouri. Two people were killed and 43 were injured in these crashes.
- In 36.2% of the traffic crashes involving fire vehicles, the fire vehicle was on an emergency run at the time of the incident.
- In 2001, one person was injured in a fire vehicle related crash every 8.1 days in the State of Missouri.
- Of all 2001 crashes involving fire vehicles, the first harmful event in 55.8% of the cases involved one motor vehicle in transport striking another motor vehicle in transport. In 25.9% of the cases, it involved a motor vehicle striking a parked vehicle. In 10.9% of the cases, the vehicle struck a fixed object.
- Of all 2001 crashes involving fire vehicles, 67.8% occurred in an urban area of the State and 32.2% occurred in a rural area.
- Of all fire vehicle drivers involved in 2001 traffic crashes, 90.5% were male and 9.5% were female. The average age of the fire vehicle driver was 36.9 years.

# 2001 FIRE VEHICLE INVOLVED CRASHES

## EMERGENCY RUN STATUS

|                           | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            | TOTAL NUMBER <sup>1</sup> |           | FIRE VEHICLE<br>DRIVERS/PASSENGERS <sup>2</sup> |           |
|---------------------------|----------|--------------|--------------------|--------------|--------------------|--------------|------------|--------------|---------------------------|-----------|---|-----------|
|                           |          |              |                    |              |                    |              |            |              | KILLED                    | INJURED   | KILLED  | INJURED   |
| FIREVEHICLE<br>ON RUN     | 2        | 100.0        | 7                  | 25.0         | 54                 | 37.5         | 63         | 36.2         | 2                         | 13        | 1   | 10        |
| FIREVEHICLE<br>NOT ON RUN | 0        | 0.0          | 21                 | 75.0         | 90                 | 62.5         | 111        | 63.8         | 0                         | 30        | 0   | 11        |
| <b>TOTAL</b>              | <b>2</b> | <b>100.0</b> | <b>28</b>          | <b>100.0</b> | <b>144</b>         | <b>100.0</b> | <b>174</b> | <b>100.0</b> | <b>2</b>                  | <b>43</b> | <b>1</b>  | <b>21</b> |

<sup>1</sup>This statistic indicates the total number of persons killed and injured in a crash where one or more fire vehicles were involved.

<sup>2</sup>This statistic indicates the number of fire vehicle drivers and passengers killed and injured.

**TABLE 3.0.1**

### 2000 and 2001 FIRE VEHICLE INVOLVED CRASH ANALYSIS

|                 | 2000 | 2001 | RATE OF CHANGE |
|-----------------|------|------|----------------|
| FATAL           | 3    | 2    | - 33.3         |
| PERSONAL INJURY | 35   | 28   | - 20.0         |
| PROPERTY DAMAGE | 159  | 144  | - 9.4          |
| TOTAL           | 197  | 174  | - 11.7         |

**TABLE 3.0.2**

### 2001 FIRE VEHICLE INVOLVED CRASHES

#### CRASH TYPE BY CRASH SEVERITY

|                          | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
|--------------------------|----------|--------------|--------------------|--------------|--------------------|--------------|------------|--------------|
| ANIMAL                   | 0        | 0.0          | 0                  | 0.0          | 4                  | 2.8          | 4          | 2.3          |
| BICYCLIST                | 0        | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0          | 0.0          |
| FIXED OBJECT             | 1        | 50.0         | 4                  | 14.3         | 14                 | 9.7          | 19         | 10.9         |
| OTHER OBJECT             | 0        | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0          | 0.0          |
| PEDESTRIAN               | 0        | 0.0          | 1                  | 3.6          | 0                  | 0.0          | 1          | 0.6          |
| TRAIN                    | 0        | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0          | 0.0          |
| VEHICLE IN TRANSPORT     | 1        | 50.0         | 17                 | 60.7         | 79                 | 54.9         | 97         | 55.8         |
| VEHICLE ON OTHER ROADWAY | 0        | 0.0          | 1                  | 3.6          | 0                  | 0.0          | 1          | 0.6          |
| PARKED VEHICLE           | 0        | 0.0          | 1                  | 3.6          | 44                 | 30.6         | 45         | 25.9         |
| NON-COLLISION OVERTURN   | 0        | 0.0          | 4                  | 14.3         | 3                  | 2.1          | 7          | 4.0          |
| NON-COLLISION OTHER      | 0        | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0          | 0.0          |
| <b>TOTAL</b>             | <b>2</b> | <b>100.0</b> | <b>28</b>          | <b>100.0</b> | <b>144</b>         | <b>100.0</b> | <b>174</b> | <b>100.0</b> |

**TABLE 3.0.3**

## 2001 FIRE VEHICLE INVOLVED CRASHES

### AREA CLASSIFICATION BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|------------|--------------|
| URBAN        | 1        | 50.0         | 13                 | 46.4         | 104                | 72.2         | 118        | 67.8         |
| RURAL        | 1        | 50.0         | 15                 | 53.6         | 40                 | 27.8         | 56         | 32.2         |
| <b>TOTAL</b> | <b>2</b> | <b>100.0</b> | <b>28</b>          | <b>100.0</b> | <b>144</b>         | <b>100.0</b> | <b>174</b> | <b>100.0</b> |

**TABLE 3.0.4**

## 2001 FIRE VEHICLE INVOLVED CRASHES

### ROAD CURVATURE BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|------------|--------------|
| STRAIGHT     | 2        | 100.0        | 20                 | 71.4         | 125                | 88.0         | 147        | 85.5         |
| CURVE        | 0        | 0.0          | 8                  | 28.6         | 17                 | 12.0         | 25         | 14.5         |
| UNKNOWN      | 0        | -            | 0                  | -            | 2                  | -            | 2          | -            |
| <b>TOTAL</b> | <b>2</b> | <b>100.0</b> | <b>28</b>          | <b>100.0</b> | <b>144</b>         | <b>100.0</b> | <b>174</b> | <b>100.0</b> |

**TABLE 3.0.5**

## 2001 FIRE VEHICLE INVOLVED CRASHES

### ROAD INCLINE BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|------------|--------------|
| LEVEL        | 2        | 100.0        | 15                 | 53.6         | 98                 | 69.5         | 115        | 67.2         |
| HILL         | 0        | 0.0          | 13                 | 46.4         | 41                 | 29.1         | 54         | 31.6         |
| CREST        | 0        | 0.0          | 0                  | 0.0          | 2                  | 1.4          | 2          | 1.2          |
| UNKNOWN      | 0        | -            | 0                  | -            | 3                  | -            | 3          | -            |
| <b>TOTAL</b> | <b>2</b> | <b>100.0</b> | <b>28</b>          | <b>100.0</b> | <b>144</b>         | <b>100.0</b> | <b>174</b> | <b>100.0</b> |

**TABLE 3.0.6**

## 2001 FIRE VEHICLE INVOLVED CRASHES

### ROAD CONDITIONS BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|------------|--------------|
| DRY          | 1        | 50.0         | 19                 | 67.9         | 114                | 79.7         | 134        | 77.5         |
| WET          | 1        | 50.0         | 8                  | 29.6         | 20                 | 14.0         | 29         | 16.8         |
| SNOW         | 0        | 0.0          | 1                  | 3.6          | 1                  | 0.7          | 2          | 1.2          |
| ICE          | 0        | 0.0          | 0                  | 0.0          | 8                  | 5.6          | 8          | 4.6          |
| MUD          | 0        | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0          | 0.0          |
| UNKNOWN      | 0        | -            | 0                  | -            | 1                  | -            | 1          | -            |
| <b>TOTAL</b> | <b>2</b> | <b>100.0</b> | <b>28</b>          | <b>100.0</b> | <b>144</b>         | <b>100.0</b> | <b>174</b> | <b>100.0</b> |

**TABLE 3.0.7**

## 2001 FIRE VEHICLE INVOLVED CRASHES

### HIGHWAY CLASSIFICATION BY CRASH SEVERITY

|                       | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
|-----------------------|----------|--------------|--------------------|--------------|--------------------|--------------|------------|--------------|
| INTERSTATE            | 0        | 0.0          | 3                  | 10.7         | 5                  | 3.5          | 8          | 4.6          |
| U.S. HIGHWAY          | 1        | 50.0         | 2                  | 7.1          | 7                  | 4.9          | 10         | 5.8          |
| STATE NUMBERED        | 0        | 0.0          | 3                  | 10.7         | 11                 | 7.6          | 14         | 8.1          |
| SINGLE STATE LETTERED | 1        | 50.0         | 5                  | 17.9         | 7                  | 4.9          | 13         | 7.5          |
| DOUBLE STATE LETTERED | 0        | 0.0          | 3                  | 10.7         | 4                  | 2.8          | 7          | 4.0          |
| OUTER ROAD            | 0        | 0.0          | 1                  | 3.6          | 0                  | 0.0          | 1          | 0.6          |
| COUNTY ROAD           | 0        | 0.0          | 3                  | 10.7         | 12                 | 8.3          | 15         | 8.6          |
| CITY STREET           | 0        | 0.0          | 8                  | 28.6         | 90                 | 62.5         | 98         | 56.3         |
| INTERSTATE LOOP       | 0        | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0          | 0.0          |
| OTHER <sup>1</sup>    | 0        | 0.0          | 0                  | 0.0          | 8                  | 5.6          | 8          | 4.6          |
| <b>TOTAL</b>          | <b>2</b> | <b>100.0</b> | <b>28</b>          | <b>100.0</b> | <b>144</b>         | <b>100.0</b> | <b>174</b> | <b>100.0</b> |

<sup>1</sup>"Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

**TABLE 3.0.8**

# 2001 FIRE VEHICLE INVOLVED CRASHES

## HIGHWAY CLASSIFICATION BY AREA CLASSIFICATION AND CRASH SEVERITY

|                       | URBAN    |              |                 |              |                 |              |            |              | RURAL    |              |                 |              |                 |              |           |              |
|-----------------------|----------|--------------|-----------------|--------------|-----------------|--------------|------------|--------------|----------|--------------|-----------------|--------------|-----------------|--------------|-----------|--------------|
|                       | FATAL    | %            | PERSONAL INJURY | %            | PROPERTY DAMAGE | %            | TOTAL      | %            | FATAL    | %            | PERSONAL INJURY | %            | PROPERTY DAMAGE | %            | TOTAL     | %            |
| INTERSTATE            | 0        | 0.0          | 1               | 7.7          | 3               | 2.9          | 4          | 3.4          | 0        | 0.0          | 2               | 13.3         | 2               | 5.0          | 4         | 7.1          |
| U.S. HIGHWAY          | 1        | 100.0        | 2               | 15.4         | 1               | 1.0          | 4          | 3.4          | 0        | 0.0          | 0               | 0.0          | 6               | 15.0         | 6         | 10.7         |
| STATE NUMBERED        | 0        | 0.0          | 1               | 7.7          | 6               | 5.8          | 7          | 5.9          | 0        | 0.0          | 2               | 13.3         | 5               | 12.5         | 7         | 12.5         |
| SINGLE STATE LETTERED | 0        | 0.0          | 0               | 0.0          | 0               | 0.0          | 0          | 0.0          | 1        | 100.0        | 5               | 33.3         | 7               | 17.5         | 13        | 23.2         |
| DOUBLE STATE LETTERED | 0        | 0.0          | 1               | 7.7          | 0               | 0.0          | 1          | 0.9          | 0        | 0.0          | 2               | 13.3         | 4               | 10.0         | 6         | 10.7         |
| OUTER ROAD            | 0        | 0.0          | 0               | 0.0          | 0               | 0.0          | 0          | 0.0          | 0        | 0.0          | 1               | 6.7          | 0               | 0.0          | 1         | 1.8          |
| COUNTY ROAD           | 0        | 0.0          | 0               | 0.0          | 2               | 1.9          | 2          | 1.7          | 0        | 0.0          | 3               | 20.0         | 10              | 25.0         | 13        | 23.2         |
| CITY STREET           | 0        | 0.0          | 8               | 61.5         | 85              | 81.7         | 93         | 78.8         | 0        | 0.0          | 0               | 0.0          | 5               | 12.5         | 5         | 8.9          |
| INTERSTATE LOOP       | 0        | 0.0          | 0               | 0.0          | 0               | 0.0          | 0          | 0.0          | 0        | 0.0          | 0               | 0.0          | 0               | 0.0          | 0         | 0.0          |
| OTHER <sup>1</sup>    | 0        | 0.0          | 0               | 0.0          | 7               | 6.7          | 7          | 5.9          | 0        | 0.0          | 0               | 0.0          | 1               | 2.5          | 1         | 1.8          |
| <b>TOTAL</b>          | <b>1</b> | <b>100.0</b> | <b>13</b>       | <b>100.0</b> | <b>104</b>      | <b>100.0</b> | <b>118</b> | <b>100.0</b> | <b>1</b> | <b>100.0</b> | <b>15</b>       | <b>100.0</b> | <b>40</b>       | <b>100.0</b> | <b>56</b> | <b>100.0</b> |

<sup>1</sup> "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 3.0.9

### 2001 FIRE VEHICLE INVOLVED CRASHES MONTH OF YEAR

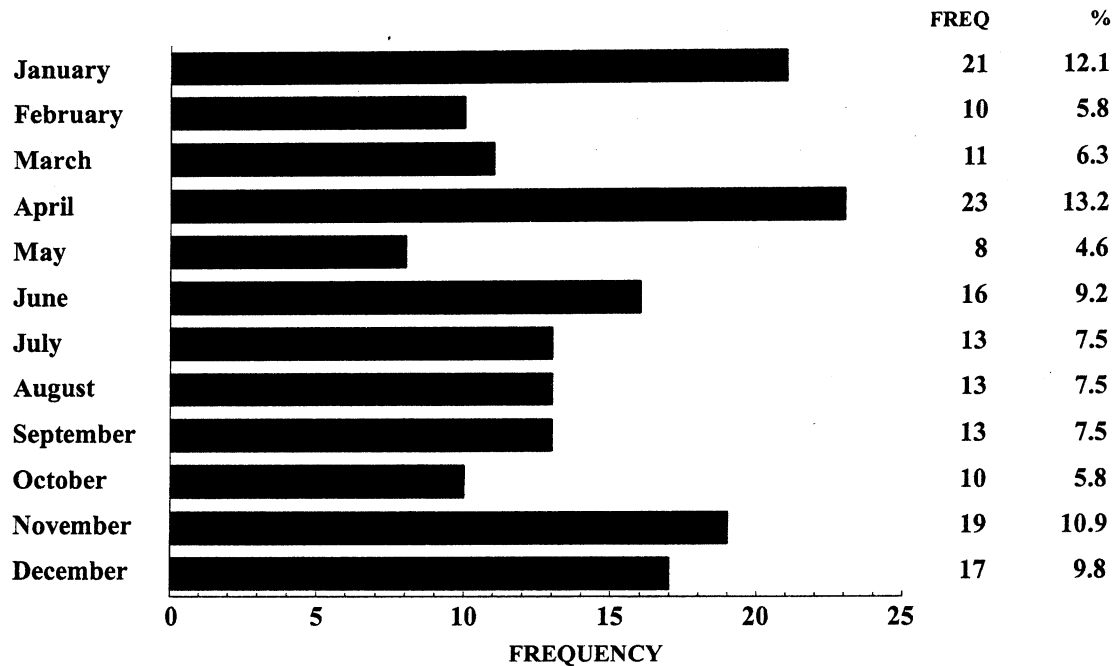


FIGURE 3.0.1

### 2001 FIRE VEHICLE INVOLVED CRASHES DAY OF WEEK

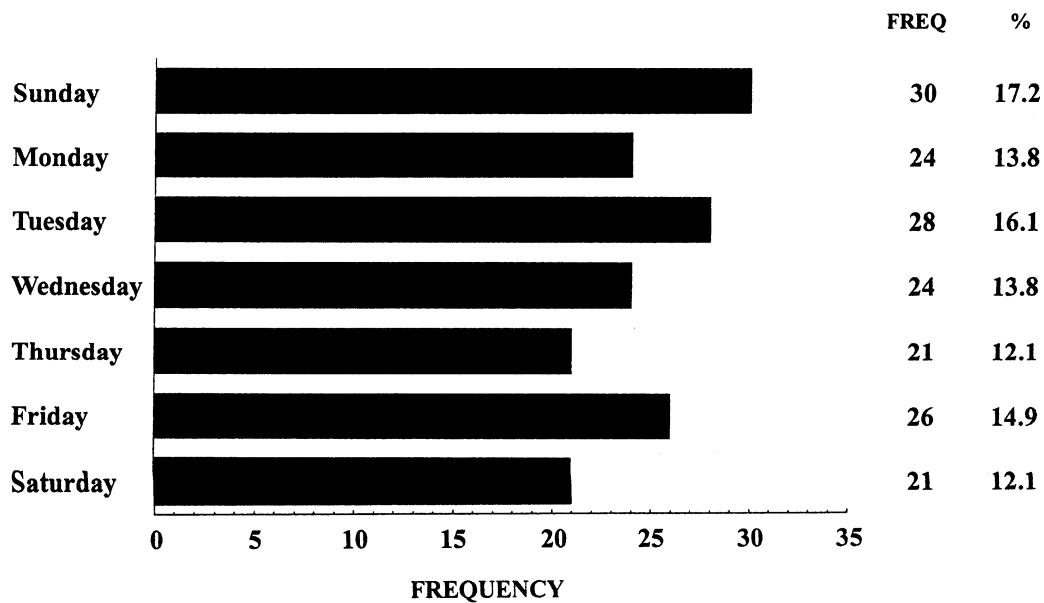
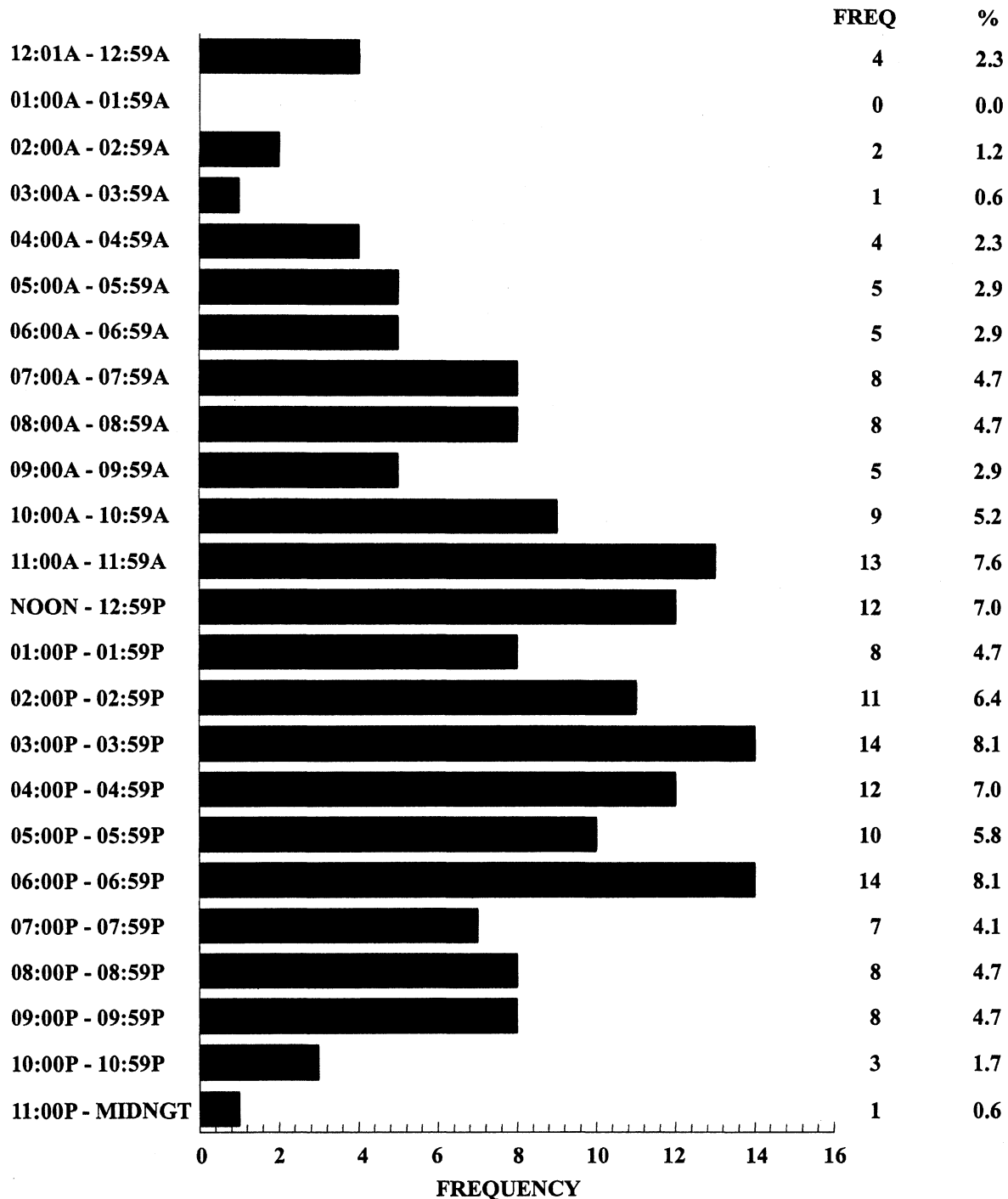


FIGURE 3.0.2



# **2001 FIRE VEHICLE INVOLVED CRASHES HOUR OF DAY**



**FIGURE 3.0.3**

Unknown Data Not Included

## 2001 MISSOURI FIRE VEHICLE CRASHES

### TYPE OF CIRCUMSTANCE INVOLVED BY CRASH SEVERITY AND PERSON CLASSIFICATION<sup>1</sup>

| FATAL AND PERSONAL INJURY<br>FIRE VEHICLE CRASHES = 30 |                                       |   |                 | TOTAL FIRE VEHICLE<br>CRASHES = 174   |   |                  |
|--|---------------------------------------|---|-----------------|---------------------------------------|---|------------------|
|  | DRIVER OF<br>FIRE VEHICLE/<br>VEHICLE | OTHER DRIVER/<br>VEHICLE/<br>PEDESTRIAN | TOTAL<br>F & PI | DRIVER OF<br>FIRE VEHICLE/<br>VEHICLE | OTHER DRIVER/<br>VEHICLE/<br>PEDESTRIAN | TOTAL<br>CRASHES |
| VEHICLE DEFECTS  | 0.0                                   | 0.0                                     | 0.0             | 2.3                                   | 0.0                                     | 2.3              |
| ACCIDENT AHEAD   | 6.7                                   | 3.3                                     | 6.7             | 2.9                                   | 2.9                                     | 4.6              |
| CONGESTION AHEAD                                       | 6.7                                   | 0.0                                     | 6.7             | 3.4                                   | 0.6                                     | 3.4              |
| EXCEEDING SPEED LIMIT /<br>TOO FAST FOR CONDITIONS     | 13.3                                  | 10.0                                    | 23.3            | 7.5                                   | 3.4                                     | 10.9             |
| IMPROPER PASSING                                       | 0.0                                   | 0.0                                     | 0.0             | 0.6                                   | 1.1                                     | 1.7              |
| VIOLATION OF STOP SIGN                                 | 0.0                                   | 0.0                                     | 0.0             | 0.0                                   | 0.6                                     | 0.6              |
| WRONG SIDE NOT PASSING                                 | 0.0                                   | 6.7                                     | 6.7             | 0.6                                   | 3.4                                     | 4.0              |
| FOLLOWING TOO CLOSE                                    | 0.0                                   | 0.0                                     | 0.0             | 0.6                                   | 1.7                                     | 2.3              |
| IMPROPER SIGNAL  | 0.0                                   | 0.0                                     | 0.0             | 0.0                                   | 0.0                                     | 0.0              |
| IMPROPER BACKING                                       | 0.0                                   | 0.0                                     | 0.0             | 1.1                                   | 1.1                                     | 2.2              |
| IMPROPER TURN  | 3.3                                   | 0.0                                     | 3.3             | 2.3                                   | 0.6                                     | 2.9              |
| IMPROPER LANE USAGE /<br>CHANGE                        | 10.0                                  | 0.0                                     | 10.0            | 2.9                                   | 1.7                                     | 4.6              |
| WRONG WAY ONE-WAY STREET                               | 0.0                                   | 0.0                                     | 0.0             | 0.0                                   | 0.0                                     | 0.0              |
| IMPROPER START FROM PARK                               | 0.0                                   | 0.0                                     | 0.0             | 0.0                                   | 0.0                                     | 0.0              |
| IMPROPERLY PARKED                                      | 3.3                                   | 0.0                                     | 3.3             | 1.1                                   | 1.7                                     | 2.8              |
| FAILED TO YIELD  | 3.3                                   | 26.7                                    | 30.0            | 2.9                                   | 14.9                                    | 17.8             |
| DRINKING   | 3.3                                   | 0.0                                     | 3.3             | 0.6                                   | 0.6                                     | 1.1              |
| DRUGS  | 0.0                                   | 0.0                                     | 0.0             | 0.0                                   | 0.0                                     | 0.0              |
| PHYSICAL IMPAIRMENT                                    | 3.3                                   | 0.0                                     | 3.3             | 0.6                                   | 0.0                                     | 0.6              |
| INATTENTION  | 26.7                                  | 43.3                                    | 63.3            | 30.5                                  | 25.9                                    | 54.6             |

<sup>1</sup>This table identifies the percentage of crashes involving one or more fire vehicles having a specific type of circumstance which contributed to the cause of the crash. This table further defines the percentage of crashes where the contributing circumstance was associated with the driver or his fire vehicle as well as those attributed to other persons and vehicles in the crash. For instance, when examining speed involvement in 2001 Missouri fire vehicle crashes, it was found that a fire vehicle driver was speeding in 7.5% of the crashes. In 3.4% of the crashes another driver was speeding. In 10.9% of the crashes either a fire vehicle driver, another driver, or both drivers were speeding.

**TABLE 3.0.10**

# **FIRE VEHICLES INVOLVED IN 2001 MISSOURI CRASHES**

## **TYPE OF VEHICLE BY CRASH SEVERITY**

|                           | <b>FATAL</b> | <b>%</b>     | <b>PERSONAL<br/>INJURY</b> | <b>%</b>     | <b>PROPERTY<br/>DAMAGE</b> | <b>%</b>     | <b>TOTAL</b> | <b>%</b>     |
|---------------------------|--------------|--------------|----------------------------|--------------|----------------------------|--------------|--------------|--------------|
| AUTOMOBILE                | 1            | 50.0         | 5                          | 17.9         | 16                         | 10.9         | 22           | 12.4         |
| SPORT UTILITY<br>VEHICLE  | 0            | 0.0          | 4                          | 14.3         | 7                          | 4.8          | 11           | 6.2          |
| VAN/SMALL BUS             | 0            | 0.0          | 1                          | 3.6          | 5                          | 3.4          | 6            | 3.4          |
| OTHER TRANSPORT<br>DEVICE | 0            | 0.0          | 1                          | 3.6          | 14                         | 9.5          | 15           | 8.5          |
| PICK-UP TRUCK             | 0            | 0.0          | 2                          | 7.1          | 13                         | 8.8          | 15           | 8.5          |
| OTHER TRUCK               | 1            | 50.0         | 15                         | 53.6         | 92                         | 62.6         | 108          | 61.0         |
| UNKNOWN                   | 0            | -            | 0                          | -            | 1                          | -            | 1            | -            |
| <b>TOTAL</b>              | <b>2</b>     | <b>100.0</b> | <b>28</b>                  | <b>100.0</b> | <b>148</b>                 | <b>100.0</b> | <b>178</b>   | <b>100.0</b> |

**TABLE 3.0.11**

# **FIRE VEHICLES INVOLVED IN 2001 MISSOURI CRASHES**

## **DRIVER INVOLVEMENT BY CRASH SEVERITY**

|                            | <b>FATAL</b> | <b>%</b>     | <b>PERSONAL<br/>INJURY</b> | <b>%</b>     | <b>PROPERTY<br/>DAMAGE</b> | <b>%</b>     | <b>TOTAL</b> | <b>%</b>     |
|----------------------------|--------------|--------------|----------------------------|--------------|----------------------------|--------------|--------------|--------------|
| DRIVERLESS                 | 0            | 0.0          | 2                          | 7.1          | 16                         | 10.8         | 18           | 10.1         |
| KNOWN DRIVER<br>INVOLVED   | 2            | 100.0        | 26                         | 92.9         | 129                        | 87.2         | 157          | 88.2         |
| UNKNOWN DRIVER<br>INVOLVED | 0            | 0.0          | 0                          | 0.0          | 3                          | 2.0          | 3            | 1.7          |
| <b>TOTAL</b>               | <b>2</b>     | <b>100.0</b> | <b>28</b>                  | <b>100.0</b> | <b>148</b>                 | <b>100.0</b> | <b>178</b>   | <b>100.0</b> |

**TABLE 3.0.12**

# DRIVERS OF FIRE VEHICLES INVOLVED IN 2001 MISSOURI CRASHES

## SEX OF DRIVER BY CRASH SEVERITY

|              | FATAL    | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
|--------------|----------|--------------|--------------------|--------------|--------------------|--------------|------------|--------------|
| MALE         | 2        | 100.0        | 25                 | 96.2         | 115                | 89.2         | 142        | 90.5         |
| FEMALE       | 0        | 0.0          | 1                  | 3.8          | 14                 | 10.8         | 15         | 9.5          |
| UNKNOWN      | 0        | -            | 0                  | -            | 3                  | -            | 3          | -            |
| <b>TOTAL</b> | <b>2</b> | <b>100.0</b> | <b>26</b>          | <b>100.0</b> | <b>132</b>         | <b>100.0</b> | <b>160</b> | <b>100.0</b> |

TABLE 3.0.13

# DRIVERS OF FIRE VEHICLES INVOLVED IN 2001 MISSOURI CRASHES

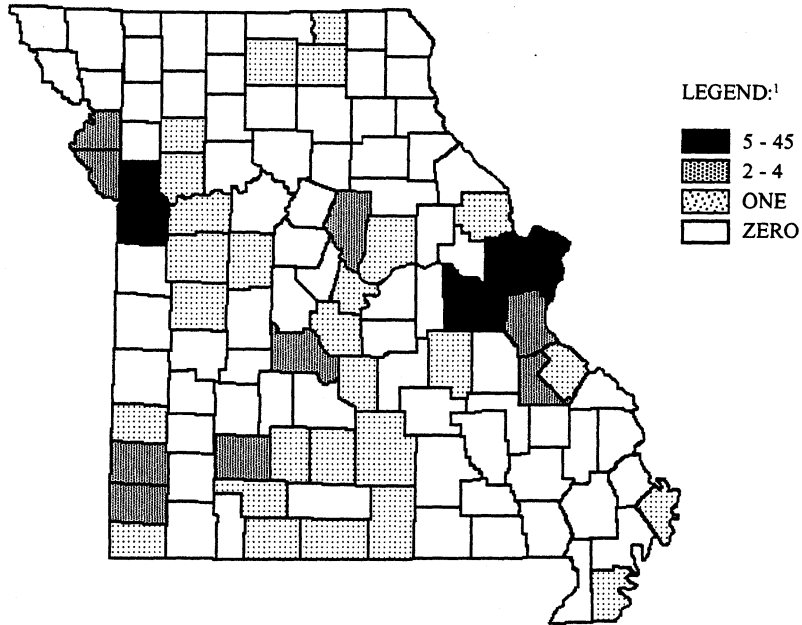
## AGE OF DRIVER BY CRASH SEVERITY

|                                  | FATAL       | %            | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL       | %            |
|----------------------------------|-------------|--------------|--------------------|--------------|--------------------|--------------|-------------|--------------|
| <b>AVERAGE AGE<br/>OF DRIVER</b> | <b>42.0</b> | <b>-</b>     | <b>34.2</b>        | <b>-</b>     | <b>37.4</b>        | <b>-</b>     | <b>36.9</b> | <b>-</b>     |
| 15 YEARS AND UNDER               | 0           | 0.0          | 0                  | 0.0          | 0                  | 0.0          | 0           | 0.0          |
| 16 - 20 YEARS                    | 0           | 0.0          | 3                  | 11.5         | 3                  | 2.3          | 6           | 3.9          |
| 21 - 25 YEARS                    | 0           | 0.0          | 2                  | 7.7          | 12                 | 9.4          | 14          | 9.0          |
| 26 - 30 YEARS                    | 0           | 0.0          | 6                  | 23.1         | 16                 | 12.5         | 22          | 14.1         |
| 31 - 35 YEARS                    | 0           | 0.0          | 4                  | 15.4         | 27                 | 21.1         | 31          | 19.9         |
| 36 - 40 YEARS                    | 1           | 50.0         | 4                  | 15.4         | 33                 | 25.8         | 38          | 24.4         |
| 41 - 45 YEARS                    | 0           | 0.0          | 3                  | 11.5         | 14                 | 10.9         | 17          | 10.9         |
| 46 - 50 YEARS                    | 1           | 50.0         | 2                  | 7.7          | 6                  | 4.7          | 9           | 5.8          |
| 51 - 55 YEARS                    | 0           | 0.0          | 1                  | 3.9          | 11                 | 8.6          | 12          | 7.7          |
| 56 - 60 YEARS                    | 0           | 0.0          | 1                  | 3.9          | 2                  | 1.6          | 3           | 1.9          |
| 61 - 65 YEARS                    | 0           | 0.0          | 0                  | 0.0          | 2                  | 1.6          | 2           | 1.3          |
| 66 YEARS AND OVER                | 0           | 0.0          | 0                  | 0.0          | 2                  | 1.6          | 2           | 1.3          |
| UNKNOWN                          | 0           | -            | 0                  | -            | 4                  | -            | 4           | -            |
| <b>TOTAL</b>                     | <b>2</b>    | <b>100.0</b> | <b>26</b>          | <b>100.0</b> | <b>132</b>         | <b>100.0</b> | <b>160</b>  | <b>100.0</b> |

TABLE 3.0.14

## 2001 FIRE VEHICLE INVOLVED CRASHES

### COUNTY QUARTILE ANALYSIS



<sup>1</sup> LEGEND CATEGORIES ARE BASED ON QUARTILES OF COUNTIES.

| RANK            | COUNTY         | FREQUENCY | PERCENT | RANK | COUNTY      | FREQUENCY | PERCENT |
|-----------------|----------------|-----------|---------|------|-------------|-----------|---------|
| 1.0             | JACKSON        | 45        | 25.9    |      |             |           |         |
| 2.0             | ST. LOUIS CITY | 36        | 20.7    | 29.0 | ADAIR       | 1         | 0.6     |
| 3.0             | ST. LOUIS      | 18        | 10.3    | 29.0 | BARTON      | 1         | 0.6     |
| 4.0             | CLAY           | 11        | 6.3     | 29.0 | CALDWELL    | 1         | 0.6     |
| 5.0             | ST. CHARLES    | 7         | 4.0     | 29.0 | CALLAWAY    | 1         | 0.6     |
| 6.0             | FRANKLIN       | 5         | 2.9     | 29.0 | CHRISTIAN   | 1         | 0.6     |
| First Quartile  |                |           |         | 29.0 | COLE        | 1         | 0.6     |
|                 |                |           |         | 29.0 | CRAWFORD    | 1         | 0.6     |
| Second Quartile |                |           |         | 29.0 | HENRY       | 1         | 0.6     |
| 8.0             | GREENE         | 4         | 2.3     | 29.0 | HOWELL      | 1         | 0.6     |
| 8.0             | JEFFERSON      | 4         | 2.3     | 29.0 | JOHNSON     | 1         | 0.6     |
| 8.0             | ST. FRANCOIS   | 4         | 2.3     | 29.0 | LAFAYETTE   | 1         | 0.6     |
| 10.0            | BOONE          | 3         | 1.7     | 29.0 | LINCOLN     | 1         | 0.6     |
| 13.0            | BUCHANAN       | 2         | 1.1     | 29.0 | MC DONALD   | 1         | 0.6     |
| 13.0            | CAMDEN         | 2         | 1.1     | 29.0 | MILLER      | 1         | 0.6     |
| 13.0            | JASPER         | 2         | 1.1     | 29.0 | MISSISSIPPI | 1         | 0.6     |
| 13.0            | NEWTON         | 2         | 1.1     | 29.0 | OZARK       | 1         | 0.6     |
| 13.0            | PLATTE         | 2         | 1.1     | 29.0 | PEMISCOT    | 1         | 0.6     |
| Second Quartile |                |           |         | 29.0 | PETTIS      | 1         | 0.6     |
|                 |                |           |         | 29.0 | PULASKI     | 1         | 0.6     |

| RANK            | COUNTY         | FREQUENCY | PERCENT | RANK | COUNTY     | FREQUENCY | PERCENT |
|-----------------|----------------|-----------|---------|------|------------|-----------|---------|
| 29.0            | RAY            | 1         | 0.6     | 79.0 | IRON       | 0         | 0.0     |
| 29.0            | STE. GENEVIEVE | 1         | 0.6     | 79.0 | KNOX       | 0         | 0.0     |
| 29.0            | SCHUYLER       | 1         | 0.6     | 79.0 | LACLEDE    | 0         | 0.0     |
| 29.0            | SULLIVAN       | 1         | 0.6     | 79.0 | LAWRENCE   | 0         | 0.0     |
| 29.0            | TANEY          | 1         | 0.6     | 79.0 | LEWIS      | 0         | 0.0     |
| 29.0            | TEXAS          | 1         | 0.6     | 79.0 | LINN       | 0         | 0.0     |
| 29.0            | WEBSTER        | 1         | 0.6     | 79.0 | LIVINGSTON | 0         | 0.0     |
| 29.0            | WRIGHT         | 1         | 0.6     | 79.0 | MACON      | 0         | 0.0     |
| Third Quartile  |                |           |         | 79.0 | MADISON    | 0         | 0.0     |
| Fourth Quartile |                |           |         | 79.0 | MARIES     | 0         | 0.0     |
| 79.0            | ANDREW         | 0         | 0.0     | 79.0 | MARION     | 0         | 0.0     |
| 79.0            | ATCHISON       | 0         | 0.0     | 79.0 | MERCER     | 0         | 0.0     |
| 79.0            | AUDRAIN        | 0         | 0.0     | 79.0 | MONITEAU   | 0         | 0.0     |
| 79.0            | BARRY          | 0         | 0.0     | 79.0 | MONROE     | 0         | 0.0     |
| 79.0            | BATES          | 0         | 0.0     | 79.0 | MONTGOMERY | 0         | 0.0     |
| 79.0            | BENTON         | 0         | 0.0     | 79.0 | MORGAN     | 0         | 0.0     |
| 79.0            | BOLLINGER      | 0         | 0.0     | 79.0 | NEW MADRID | 0         | 0.0     |
| 79.0            | BUTLER         | 0         | 0.0     | 79.0 | NODAWAY    | 0         | 0.0     |
| 79.0            | CAPE GIRARDEAU | 0         | 0.0     | 79.0 | OREGON     | 0         | 0.0     |
| 79.0            | CARROLL        | 0         | 0.0     | 79.0 | OSAGE      | 0         | 0.0     |
| 79.0            | CARTER         | 0         | 0.0     | 79.0 | PERRY      | 0         | 0.0     |
| 79.0            | CASS           | 0         | 0.0     | 79.0 | PHELPS     | 0         | 0.0     |
| 79.0            | CEDAR          | 0         | 0.0     | 79.0 | PIKE       | 0         | 0.0     |
| 79.0            | CHARITON       | 0         | 0.0     | 79.0 | POLK       | 0         | 0.0     |
| 79.0            | CLARK          | 0         | 0.0     | 79.0 | PUTNAM     | 0         | 0.0     |
| 79.0            | CLINTON        | 0         | 0.0     | 79.0 | RALLS      | 0         | 0.0     |
| 79.0            | COOPER         | 0         | 0.0     | 79.0 | RANDOLPH   | 0         | 0.0     |
| 79.0            | DADE           | 0         | 0.0     | 79.0 | REYNOLDS   | 0         | 0.0     |
| 79.0            | DALLAS         | 0         | 0.0     | 79.0 | RIPLEY     | 0         | 0.0     |
| 79.0            | DAVIESS        | 0         | 0.0     | 79.0 | ST. CLAIR  | 0         | 0.0     |
| 79.0            | DE KALB        | 0         | 0.0     | 79.0 | SALINE     | 0         | 0.0     |
| 79.0            | DENT           | 0         | 0.0     | 79.0 | SCOTLAND   | 0         | 0.0     |
| 79.0            | DOUGLAS        | 0         | 0.0     | 79.0 | SCOTT      | 0         | 0.0     |
| 79.0            | DUNKLIN        | 0         | 0.0     | 79.0 | SHANNON    | 0         | 0.0     |
| 79.0            | GASCONADE      | 0         | 0.0     | 79.0 | SHELBY     | 0         | 0.0     |
| 79.0            | GENTRY         | 0         | 0.0     | 79.0 | STODDARD   | 0         | 0.0     |
| 79.0            | GRUNDY         | 0         | 0.0     | 79.0 | STONE      | 0         | 0.0     |
| 79.0            | HARRISON       | 0         | 0.0     | 79.0 | VERNON     | 0         | 0.0     |
| 79.0            | HICKORY        | 0         | 0.0     | 79.0 | WARREN     | 0         | 0.0     |
| 79.0            | HOLT           | 0         | 0.0     | 79.0 | WASHINGTON | 0         | 0.0     |
| 79.0            | HOWARD         | 0         | 0.0     | 79.0 | WAYNE      | 0         | 0.0     |
|                 |                |           |         | 79.0 | WORTH      | 0         | 0.0     |

TABLE 3.0.15



## 4.0 AMBULANCE INVOLVEMENT

*This section presents a series of data displays which identify ambulance involvement in Missouri's traffic crash activity. Ambulance traffic crashes are defined as any crash in which one or more ambulances were directly involved in the incident. Data displays also are provided which describe characteristics of the ambulance drivers involved in these traffic crashes.*

### 2001 SUMMARY ANALYSIS

- In 2001, there were 118 traffic crashes involving one or more ambulances in the State of Missouri. No people were killed and 27 were injured in these crashes.
- In 31.4% of the traffic crashes involving ambulances, the ambulance was on an emergency run at the time of the incident.
- In 2001, one person was killed or injured in an ambulance related crash every 13.5 days in the State of Missouri.
- Of all 2001 crashes involving ambulances, the first harmful event in 61.0% of the cases involved one motor vehicle in transport striking another motor vehicle in transport. In 22.0% of the cases, it involved a motor vehicle striking a parked vehicle.
- Of all 2001 crashes involving ambulances, 69.5% occurred in an urban area of the State and 30.5% occurred in a rural area.
- Of all ambulance drivers involved in 2001 traffic crashes, 72.3% were male and 27.7% were female. The average age of the ambulance driver was 33.8 years.



## 2001 AMBULANCE INVOLVED CRASHES

### EMERGENCY RUN STATUS

|                         | FATAL | %   | PERSONAL<br>INJURY | %     | PROPERTY<br>DAMAGE | %     | TOTAL | %     | TOTAL NUMBER <sup>1</sup> |         | AMBULANCE<br>DRIVERS/PASSENGERS <sup>2</sup> |         |
|-------------------------|-------|-----|--------------------|-------|--------------------|-------|-------|-------|---------------------------|---------|--|---------|
|                         |       |     |                    |       |                    |       |       |       | KILLED                    | INJURED | KILLED                                       | INJURED |
| AMBULANCE<br>ON RUN     | 0     | 0.0 | 6                  | 37.5  | 31                 | 30.4  | 37    | 31.4  | 0                         | 13      | 0  | 9       |
| AMBULANCE<br>NOT ON RUN | 0     | 0.0 | 10                 | 62.5  | 71                 | 69.6  | 81    | 68.6  | 0                         | 14      | 0  | 4       |
| <b>TOTAL</b>            | 0     | 0.0 | 16                 | 100.0 | 102                | 100.0 | 118   | 100.0 | 0                         | 27      | 0  | 13      |

<sup>1</sup>This statistic indicates the total number of persons killed and injured in a crash where one or more ambulances were involved.

<sup>2</sup>This statistic indicates the number of ambulance drivers and passengers killed and injured.

**TABLE 4.0.1**

### 2000 and 2001 AMBULANCE INVOLVED CRASH ANALYSIS

|                 | 2000 | 2001 | RATE OF CHANGE |
|-----------------|------|------|----------------|
| FATAL           | 0    | 0    | = 0.0          |
| PERSONAL INJURY | 32   | 16   | - 50.0         |
| PROPERTY DAMAGE | 136  | 102  | - 25.0         |
| TOTAL           | 168  | 118  | - 29.8         |

TABLE 4.0.2

### 2001 AMBULANCE INVOLVED CRASHES

#### CRASH TYPE BY CRASH SEVERITY

|                          | FATAL | %   | PERSONAL<br>INJURY | %     | PROPERTY<br>DAMAGE | %     | TOTAL | %     |
|--------------------------|-------|-----|--------------------|-------|--------------------|-------|-------|-------|
| ANIMAL                   | 0     | 0.0 | 0                  | 0.0   | 6                  | 5.9   | 6     | 5.1   |
| BICYCLIST                | 0     | 0.0 | 0                  | 0.0   | 0                  | 0.0   | 0     | 0.0   |
| FIXED OBJECT             | 0     | 0.0 | 1                  | 6.3   | 11                 | 10.8  | 12    | 10.2  |
| OTHER OBJECT             | 0     | 0.0 | 0                  | 0.0   | 1                  | 1.0   | 1     | 0.9   |
| PEDESTRIAN               | 0     | 0.0 | 0                  | 0.0   | 0                  | 0.0   | 0     | 0.0   |
| TRAIN                    | 0     | 0.0 | 0                  | 0.0   | 0                  | 0.0   | 0     | 0.0   |
| VEHICLE IN TRANSPORT     | 0     | 0.0 | 14                 | 87.5  | 58                 | 56.9  | 72    | 61.0  |
| VEHICLE ON OTHER ROADWAY | 0     | 0.0 | 0                  | 0.0   | 0                  | 0.0   | 0     | 0.0   |
| PARKED VEHICLE           | 0     | 0.0 | 0                  | 0.0   | 26                 | 25.5  | 26    | 22.0  |
| NON-COLLISION OVERTURN   | 0     | 0.0 | 0                  | 0.0   | 0                  | 0.0   | 0     | 0.0   |
| NON-COLLISION OTHER      | 0     | 0.0 | 1                  | 6.3   | 0                  | 0.0   | 1     | 0.9   |
| <b>TOTAL</b>             | 0     | 0.0 | 16                 | 100.0 | 102                | 100.0 | 118   | 100.0 |

TABLE 4.0.3

**2001 AMBULANCE INVOLVED CRASHES**

**AREA CLASSIFICATION BY CRASH SEVERITY**

|              | <b>FATAL</b> | <b>%</b>   | <b>PERSONAL<br/>INJURY</b> | <b>%</b>     | <b>PROPERTY<br/>DAMAGE</b> | <b>%</b>     | <b>TOTAL</b> | <b>%</b>     |
|--------------|--------------|------------|----------------------------|--------------|----------------------------|--------------|--------------|--------------|
| URBAN        | 0            | 0.0        | 10                         | 62.5         | 72                         | 70.6         | 82           | 69.5         |
| RURAL        | 0            | 0.0        | 6                          | 37.5         | 30                         | 29.4         | 36           | 30.5         |
| <b>TOTAL</b> | <b>0</b>     | <b>0.0</b> | <b>16</b>                  | <b>100.0</b> | <b>102</b>                 | <b>100.0</b> | <b>118</b>   | <b>100.0</b> |

**TABLE 4.0.4**

**2001 AMBULANCE INVOLVED CRASHES**

**ROAD CURVATURE BY CRASH SEVERITY**

|              | <b>FATAL</b> | <b>%</b>   | <b>PERSONAL<br/>INJURY</b> | <b>%</b>     | <b>PROPERTY<br/>DAMAGE</b> | <b>%</b>     | <b>TOTAL</b> | <b>%</b>     |
|--------------|--------------|------------|----------------------------|--------------|----------------------------|--------------|--------------|--------------|
| STRAIGHT     | 0            | 0.0        | 13                         | 81.3         | 93                         | 91.2         | 106          | 89.8         |
| CURVE        | 0            | 0.0        | 3                          | 18.7         | 9                          | 8.8          | 12           | 10.2         |
| UNKNOWN      | 0            | -          | 0                          | -            | 0                          | -            | 0            | -            |
| <b>TOTAL</b> | <b>0</b>     | <b>0.0</b> | <b>16</b>                  | <b>100.0</b> | <b>102</b>                 | <b>100.0</b> | <b>118</b>   | <b>100.0</b> |

**TABLE 4.0.5**

**2001 AMBULANCE INVOLVED CRASHES**

**ROAD INCLINE BY CRASH SEVERITY**

|              | <b>FATAL</b> | <b>%</b>   | <b>PERSONAL<br/>INJURY</b> | <b>%</b>     | <b>PROPERTY<br/>DAMAGE</b> | <b>%</b>     | <b>TOTAL</b> | <b>%</b>     |
|--------------|--------------|------------|----------------------------|--------------|----------------------------|--------------|--------------|--------------|
| LEVEL        | 0            | 0.0        | 12                         | 75.0         | 68                         | 66.7         | 80           | 67.8         |
| HILL         | 0            | 0.0        | 4                          | 25.0         | 33                         | 32.3         | 37           | 31.4         |
| CREST        | 0            | 0.0        | 0                          | 0.0          | 1                          | 1.0          | 1            | 0.9          |
| UNKNOWN      | 0            | -          | 0                          | -            | 0                          | -            | 0            | -            |
| <b>TOTAL</b> | <b>0</b>     | <b>0.0</b> | <b>16</b>                  | <b>100.0</b> | <b>102</b>                 | <b>100.0</b> | <b>118</b>   | <b>100.0</b> |

**TABLE 4.0.6**

## 2001 AMBULANCE INVOLVED CRASHES

### ROAD CONDITIONS BY CRASH SEVERITY

|              | FATAL    | %          | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
|--------------|----------|------------|--------------------|--------------|--------------------|--------------|------------|--------------|
| DRY          | 0        | 0.0        | 12                 | 75.0         | 78                 | 76.5         | 90         | 76.3         |
| WET          | 0        | 0.0        | 4                  | 25.0         | 14                 | 13.7         | 18         | 15.3         |
| SNOW         | 0        | 0.0        | 0                  | 0.0          | 3                  | 2.9          | 3          | 2.5          |
| ICE          | 0        | 0.0        | 0                  | 0.0          | 7                  | 6.9          | 7          | 5.9          |
| MUD          | 0        | 0.0        | 0                  | 0.0          | 0                  | 0.0          | 0          | 0.0          |
| UNKNOWN      | 0        | -          | 0                  | -            | 0                  | -            | 0          | -            |
| <b>TOTAL</b> | <b>0</b> | <b>0.0</b> | <b>16</b>          | <b>100.0</b> | <b>102</b>         | <b>100.0</b> | <b>118</b> | <b>100.0</b> |

**TABLE 4.0.7**

## 2001 AMBULANCE INVOLVED CRASHES

### HIGHWAY CLASSIFICATION BY CRASH SEVERITY

|                       | FATAL    | %          | PERSONAL<br>INJURY | %            | PROPERTY<br>DAMAGE | %            | TOTAL      | %            |
|-----------------------|----------|------------|--------------------|--------------|--------------------|--------------|------------|--------------|
| INTERSTATE            | 0        | 0.0        | 0                  | 0.0          | 8                  | 7.8          | 8          | 6.8          |
| U.S. HIGHWAY          | 0        | 0.0        | 3                  | 18.8         | 9                  | 8.8          | 12         | 10.2         |
| STATE NUMBERED        | 0        | 0.0        | 1                  | 6.3          | 11                 | 10.8         | 12         | 10.2         |
| SINGLE STATE LETTERED | 0        | 0.0        | 0                  | 0.0          | 5                  | 4.9          | 5          | 4.2          |
| DOUBLE STATE LETTERED | 0        | 0.0        | 0                  | 0.0          | 2                  | 2.0          | 2          | 1.7          |
| OUTER ROAD            | 0        | 0.0        | 0                  | 0.0          | 1                  | 1.0          | 1          | 0.9          |
| COUNTY ROAD           | 0        | 0.0        | 1                  | 6.3          | 7                  | 6.9          | 8          | 6.8          |
| CITY STREET           | 0        | 0.0        | 10                 | 62.5         | 55                 | 53.9         | 65         | 55.1         |
| INTERSTATE LOOP       | 0        | 0.0        | 0                  | 0.0          | 1                  | 1.0          | 1          | 0.9          |
| OTHER <sup>1</sup>    | 0        | 0.0        | 1                  | 6.3          | 3                  | 2.9          | 4          | 3.4          |
| <b>TOTAL</b>          | <b>0</b> | <b>0.0</b> | <b>16</b>          | <b>100.0</b> | <b>102</b>         | <b>100.0</b> | <b>118</b> | <b>100.0</b> |

<sup>1</sup>"Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

**TABLE 4.0.8**

# 2001 AMBULANCE INVOLVED CRASHES

## HIGHWAY CLASSIFICATION BY AREA CLASSIFICATION AND CRASH SEVERITY

|                       | URBAN |     |                 |       |                 |       |       |       | RURAL |     |                 |       |                 |       |       |       |
|-----------------------|-------|-----|-----------------|-------|-----------------|-------|-------|-------|-------|-----|-----------------|-------|-----------------|-------|-------|-------|
|                       | FATAL | %   | PERSONAL INJURY | %     | PROPERTY DAMAGE | %     | TOTAL | %     | FATAL | %   | PERSONAL INJURY | %     | PROPERTY DAMAGE | %     | TOTAL | %     |
| INTERSTATE            | 0     | 0.0 | 0               | 0.0   | 5               | 6.9   | 5     | 6.1   | 0     | 0.0 | 0               | 0.0   | 3               | 10.0  | 3     | 8.3   |
| U.S. HIGHWAY          | 0     | 0.0 | 0               | 0.0   | 5               | 6.9   | 5     | 6.1   | 0     | 0.0 | 3               | 50.0  | 4               | 13.3  | 7     | 19.4  |
| STATE NUMBERED        | 0     | 0.0 | 0               | 0.0   | 4               | 5.6   | 4     | 4.9   | 0     | 0.0 | 1               | 16.7  | 7               | 23.3  | 8     | 22.2  |
| SINGLE STATE LETTERED | 0     | 0.0 | 0               | 0.0   | 0               | 0.0   | 0     | 0.0   | 0     | 0.0 | 0               | 0.0   | 5               | 16.7  | 5     | 13.9  |
| DOUBLE STATE LETTERED | 0     | 0.0 | 0               | 0.0   | 1               | 1.4   | 1     | 1.2   | 0     | 0.0 | 0               | 0.0   | 1               | 3.3   | 1     | 2.8   |
| OUTER ROAD            | 0     | 0.0 | 0               | 0.0   | 0               | 0.0   | 0     | 0.0   | 0     | 0.0 | 0               | 0.0   | 1               | 3.3   | 1     | 2.8   |
| COUNTY ROAD           | 0     | 0.0 | 0               | 0.0   | 1               | 1.4   | 1     | 1.2   | 0     | 0.0 | 1               | 16.7  | 6               | 20.0  | 7     | 19.4  |
| CITY STREET           | 0     | 0.0 | 10              | 100.0 | 53              | 73.6  | 63    | 76.8  | 0     | 0.0 | 0               | 0.0   | 2               | 6.7   | 2     | 5.6   |
| INTERSTATE LOOP       | 0     | 0.0 | 0               | 0.0   | 0               | 0.0   | 0     | 0.0   | 0     | 0.0 | 0               | 0.0   | 1               | 3.3   | 1     | 2.8   |
| OTHER <sup>1</sup>    | 0     | 0.0 | 0               | 0.0   | 3               | 4.2   | 3     | 3.7   | 0     | 0.0 | 1               | 16.7  | 0               | 0.0   | 1     | 2.8   |
| <b>TOTAL</b>          | 0     | 0.0 | 10              | 100.0 | 72              | 100.0 | 82    | 100.0 | 0     | 0.0 | 6               | 100.0 | 30              | 100.0 | 36    | 100.0 |

<sup>1</sup> "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

**TABLE 4.0.9**

### 2001 AMBULANCE INVOLVED CRASHES MONTH OF YEAR

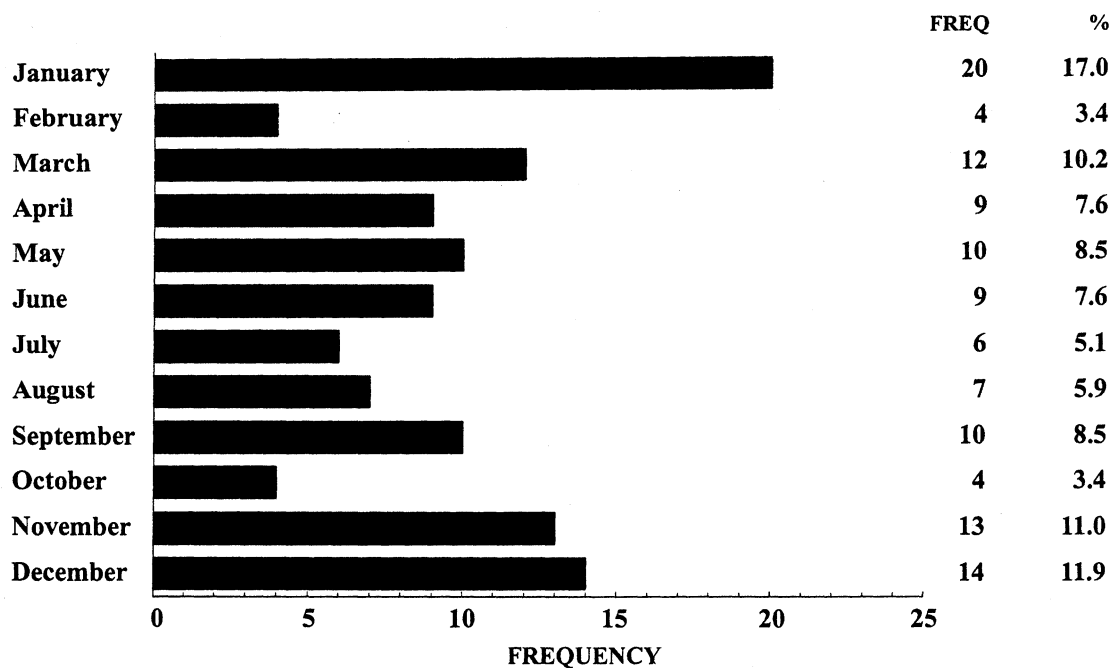


FIGURE 4.0.1

### 2001 AMBULANCE INVOLVED CRASHES DAY OF WEEK

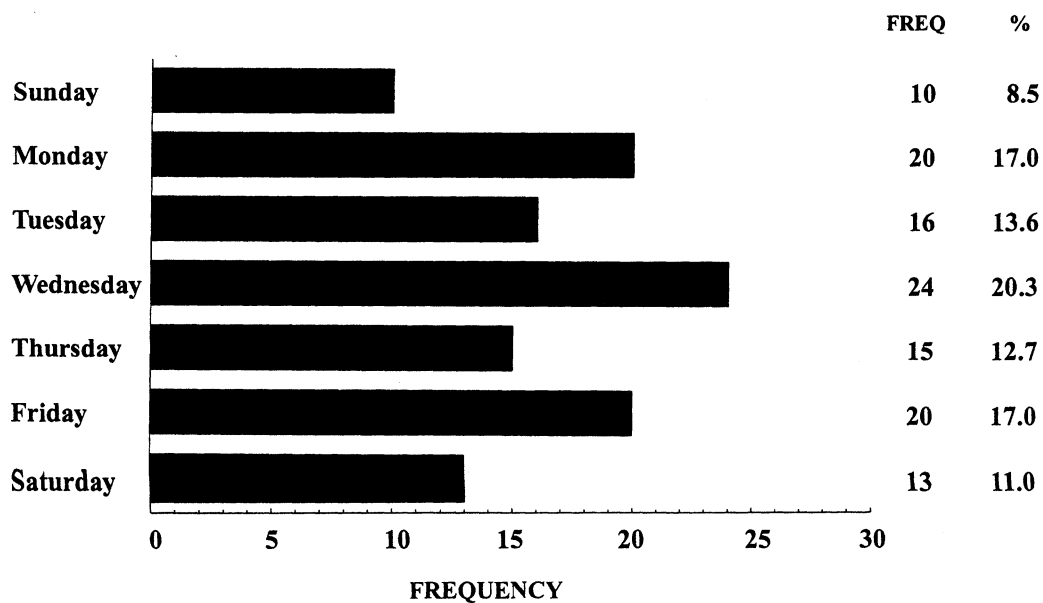
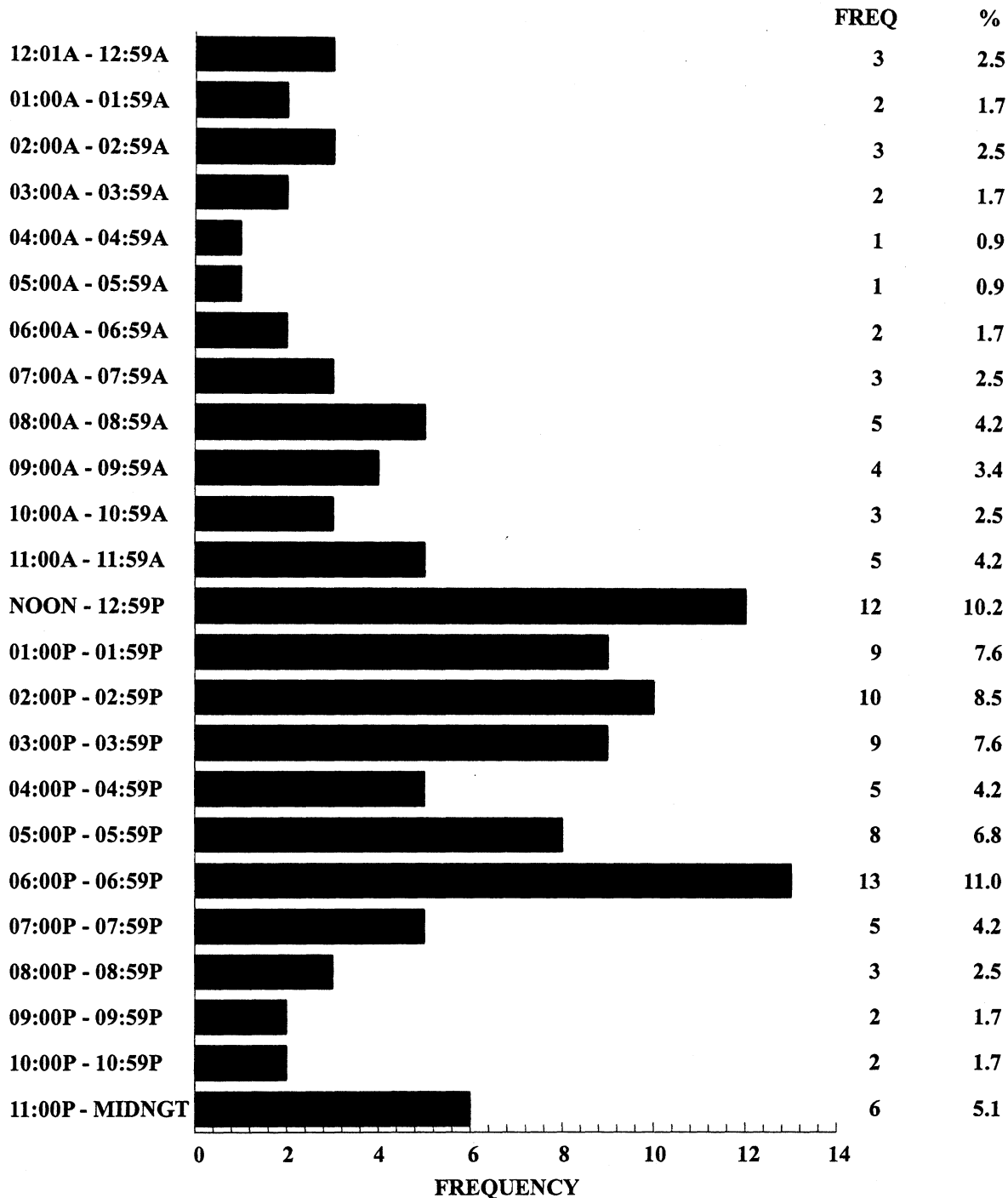


FIGURE 4.0.2

# **2001 AMBULANCE INVOLVED CRASHES HOUR OF DAY**



**FIGURE 4.0.3**

Unknown Data Not Included

## 2001 MISSOURI AMBULANCE CRASHES

### TYPE OF CIRCUMSTANCE INVOLVED BY CRASH SEVERITY AND PERSON CLASSIFICATION<sup>1</sup>

| FATAL AND PERSONAL INJURY<br>AMBULANCE CRASHES = 16 |                                    |   |                 | TOTAL AMBULANCE<br>CRASHES = 118   |   |                  |
|---|------------------------------------|---|-----------------|------------------------------------|---|------------------|
|   | DRIVER OF<br>AMBULANCE/<br>VEHICLE | OTHER DRIVER/<br>VEHICLE/<br>PEDESTRIAN | TOTAL<br>F & PI | DRIVER OF<br>AMBULANCE/<br>VEHICLE | OTHER DRIVER/<br>VEHICLE/<br>PEDESTRIAN | TOTAL<br>CRASHES |
| VEHICLE DEFECTS                                     | 0.0                                | 6.3                                     | 6.3             | 3.4                                | 2.5                                     | 5.9              |
| ACCIDENT AHEAD                                      | 0.0                                | 0.0                                     | 0.0             | 2.5                                | 2.5                                     | 2.5              |
| CONGESTION AHEAD                                    | 0.0                                | 0.0                                     | 0.0             | 4.2                                | 3.4                                     | 5.1              |
| EXCEEDING SPEED LIMIT /<br>TOO FAST FOR CONDITIONS  | 12.5                               | 6.3                                     | 18.8            | 3.4                                | 3.4                                     | 5.9              |
| IMPROPER PASSING                                    | 0.0                                | 12.5                                    | 12.5            | 1.7                                | 3.4                                     | 5.1              |
| VIOLATION OF STOP SIGN                              | 6.3                                | 0.0                                     | 6.3             | 0.8                                | 0.0                                     | 0.8              |
| WRONG SIDE NOT PASSING                              | 0.0                                | 6.3                                     | 6.3             | 0.8                                | 1.7                                     | 2.5              |
| FOLLOWING TOO CLOSE                                 | 0.0                                | 6.3                                     | 6.3             | 1.7                                | 2.5                                     | 4.2              |
| IMPROPER SIGNAL                                     | 0.0                                | 0.0                                     | 0.0             | 0.0                                | 0.0                                     | 0.0              |
| IMPROPER BACKING                                    | 0.0                                | 0.0                                     | 0.0             | 2.5                                | 0.8                                     | 3.4              |
| IMPROPER TURN                                       | 0.0                                | 0.0                                     | 0.0             | 1.7                                | 0.8                                     | 2.5              |
| IMPROPER LANE USAGE /<br>CHANGE                     | 0.0                                | 6.3                                     | 6.3             | 2.5                                | 3.4                                     | 5.9              |
| WRONG WAY ONE-WAY STREET                            | 0.0                                | 0.0                                     | 0.0             | 0.8                                | 0.0                                     | 0.8              |
| IMPROPER START FROM PARK                            | 0.0                                | 0.0                                     | 0.0             | 0.8                                | 0.0                                     | 0.8              |
| IMPROPERLY PARKED                                   | 0.0                                | 0.0                                     | 0.0             | 1.7                                | 1.7                                     | 3.4              |
| FAILED TO YIELD                                     | 0.0                                | 18.8                                    | 18.8            | 1.7                                | 10.2                                    | 11.9             |
| DRINKING  | 0.0                                | 6.3                                     | 6.3             | 0.0                                | 1.7                                     | 1.7              |
| DRUGS   | 0.0                                | 0.0                                     | 0.0             | 0.0                                | 0.0                                     | 0.0              |
| PHYSICAL IMPAIRMENT                                 | 0.0                                | 0.0                                     | 0.0             | 0.0                                | 0.8                                     | 0.8              |
| INATTENTION   | 12.5                               | 37.5                                    | 50.0            | 27.1                               | 29.7                                    | 54.2             |

<sup>1</sup>This table identifies the percentage of crashes involving one or more ambulances having a specific type of circumstance which contributed to the cause of the crash. This table further defines the percentage of crashes where the contributing circumstance was associated with the driver or his ambulance as well as those attributed to other persons and vehicles in the crash. For instance, when examining speed involvement in 2001 Missouri ambulance crashes, it was found that an ambulance driver was speeding in 3.4% of the crashes. In 3.4% of the crashes another driver was speeding. In 5.9% of the crashes either an ambulance driver, another driver, or both drivers were speeding.

**TABLE 4.0.10**



# **AMBULANCES INVOLVED IN 2001 MISSOURI CRASHES**

## **DRIVER INVOLVEMENT BY CRASH SEVERITY**

|                            | <b>FATAL</b> | <b>%</b> | <b>PERSONAL<br/>INJURY</b> | <b>%</b> | <b>PROPERTY<br/>DAMAGE</b> | <b>%</b> | <b>TOTAL</b> | <b>%</b> |
|----------------------------|--------------|----------|----------------------------|----------|----------------------------|----------|--------------|----------|
| DRIVERLESS                 | 0            | 0.0      | 1                          | 6.3      | 17                         | 16.5     | 18           | 15.1     |
| KNOWN DRIVER<br>INVOLVED   | 0            | 0.0      | 15                         | 93.7     | 86                         | 83.5     | 101          | 84.9     |
| UNKNOWN DRIVER<br>INVOLVED | 0            | 0.0      | 0                          | 0.0      | 0                          | 0.0      | 0            | 0.0      |
| <b>TOTAL</b>               | 0            | 0.0      | 16                         | 100.0    | 103                        | 100.0    | 119          | 100.0    |

**TABLE 4.0.11**

# **DRIVERS OF AMBULANCES INVOLVED IN 2001 MISSOURI CRASHES**

## **SEX OF DRIVER BY CRASH SEVERITY**

|              | <b>FATAL</b> | <b>%</b> | <b>PERSONAL<br/>INJURY</b> | <b>%</b> | <b>PROPERTY<br/>DAMAGE</b> | <b>%</b> | <b>TOTAL</b> | <b>%</b> |
|--------------|--------------|----------|----------------------------|----------|----------------------------|----------|--------------|----------|
| MALE         | 0            | 0.0      | 12                         | 80.0     | 61                         | 70.9     | 73           | 72.3     |
| FEMALE       | 0            | 0.0      | 3                          | 20.0     | 25                         | 29.1     | 28           | 27.7     |
| UNKNOWN      | 0            | -        | 0                          | -        | 0                          | -        | 0            | -        |
| <b>TOTAL</b> | 0            | 0.0      | 15                         | 100.0    | 86                         | 100.0    | 101          | 100.0    |

**TABLE 4.0.12**

# DRIVERS OF AMBULANCES INVOLVED IN 2001 MISSOURI CRASHES

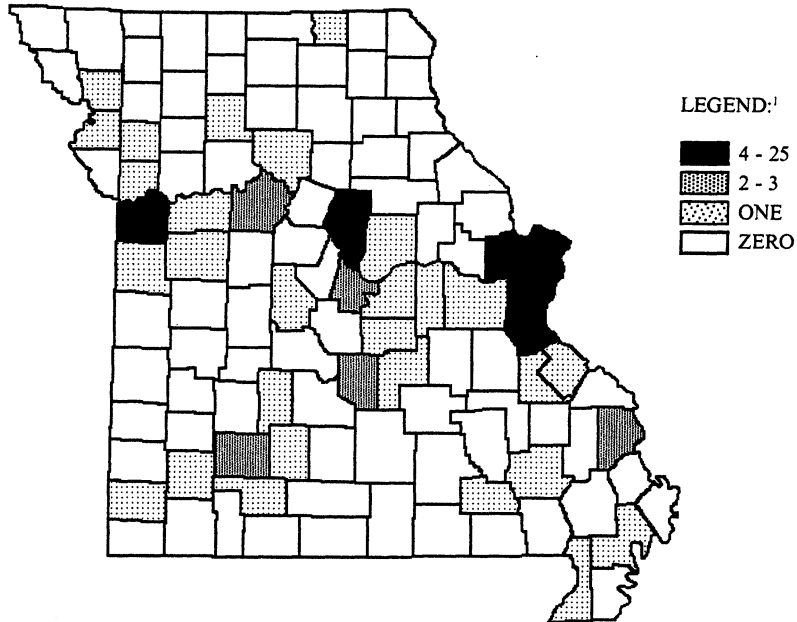
## AGE OF DRIVER BY CRASH SEVERITY

|                                  | FATAL | %   | PERSONAL<br>INJURY | %     | PROPERTY<br>DAMAGE | %     | TOTAL | %     |
|----------------------------------|-------|-----|--------------------|-------|--------------------|-------|-------|-------|
| <b>AVERAGE AGE<br/>OF DRIVER</b> | 0.0   | -   | 36.1               | -     | 33.4               | -     | 33.8  | -     |
| 15 YEARS AND UNDER               | 0     | 0.0 | 0                  | 0.0   | 0                  | 0.0   | 0     | 0.0   |
| 16 - 20 YEARS                    | 0     | 0.0 | 0                  | 0.0   | 2                  | 2.3   | 2     | 2.0   |
| 21 - 25 YEARS                    | 0     | 0.0 | 1                  | 6.7   | 17                 | 19.8  | 18    | 17.8  |
| 26 - 30 YEARS                    | 0     | 0.0 | 2                  | 13.3  | 26                 | 30.2  | 28    | 27.7  |
| 31 - 35 YEARS                    | 0     | 0.0 | 6                  | 40.0  | 12                 | 14.0  | 18    | 17.8  |
| 36 - 40 YEARS                    | 0     | 0.0 | 3                  | 20.0  | 7                  | 8.1   | 10    | 9.9   |
| 41 - 45 YEARS                    | 0     | 0.0 | 1                  | 6.7   | 9                  | 10.5  | 10    | 9.9   |
| 46 - 50 YEARS                    | 0     | 0.0 | 1                  | 6.7   | 7                  | 8.1   | 8     | 7.9   |
| 51 - 55 YEARS                    | 0     | 0.0 | 0                  | 0.0   | 3                  | 3.5   | 3     | 3.0   |
| 56 - 60 YEARS                    | 0     | 0.0 | 1                  | 6.7   | 2                  | 2.3   | 3     | 3.0   |
| 61 - 65 YEARS                    | 0     | 0.0 | 0                  | 0.0   | 1                  | 1.2   | 1     | 1.0   |
| 66 YEARS AND OVER                | 0     | 0.0 | 0                  | 0.0   | 0                  | 0.0   | 0     | 0.0   |
| UNKNOWN                          | 0     | -   | 0                  | -     | 0                  | -     | 0     | -     |
| <b>TOTAL</b>                     | 0     | 0.0 | 15                 | 100.0 | 86                 | 100.0 | 101   | 100.0 |

TABLE 4.0.13

## 2001 AMBULANCE INVOLVED CRASHES

### COUNTY QUARTILE ANALYSIS



<sup>1</sup>LEGEND CATEGORIES ARE BASED ON QUARTILES OF COUNTIES.

| RANK            | COUNTY         | FREQUENCY | PERCENT | RANK | COUNTY         | FREQUENCY | PERCENT |
|-----------------|----------------|-----------|---------|------|----------------|-----------|---------|
| 1.0             | ST. LOUIS CITY | 25        | 21.2    | 25.5 | CASS           | 1         | 0.8     |
| 2.0             | JACKSON        | 23        | 19.5    | 25.5 | CHARITON       | 1         | 0.8     |
| 3.0             | ST. LOUIS      | 18        | 15.3    | 25.5 | CHRISTIAN      | 1         | 0.8     |
| 5.0             | BOONE          | 4         | 3.4     | 25.5 | CLAY           | 1         | 0.8     |
| 5.0             | JEFFERSON      | 4         | 3.4     | 25.5 | CLINTON        | 1         | 0.8     |
| 5.0             | ST. CHARLES    | 4         | 3.4     | 25.5 | DALLAS         | 1         | 0.8     |
| First Quartile  |                |           |         | 25.5 | DUNKLIN        | 1         | 0.8     |
| Second Quartile |                |           |         | 25.5 | FRANKLIN       | 1         | 0.8     |
| 7.5             | COLE           | 3         | 2.5     | 25.5 | GASCONADE      | 1         | 0.8     |
| 7.5             | GREENE         | 3         | 2.5     | 25.5 | JOHNSON        | 1         | 0.8     |
| 10.0            | CAPE GIRARDEAU | 2         | 1.7     | 25.5 | LAFAYETTE      | 1         | 0.8     |
| 10.0            | PULASKI        | 2         | 1.7     | 25.5 | LAWRENCE       | 1         | 0.8     |
| 10.0            | SALINE         | 2         | 1.7     | 25.5 | LIVINGSTON     | 1         | 0.8     |
| Second Quartile |                |           |         | 25.5 | MARIES         | 1         | 0.8     |
| Third Quartile  |                |           |         | 25.5 | MORGAN         | 1         | 0.8     |
| 25.5            | ANDREW         | 1         | 0.8     | 25.5 | NEW MADRID     | 1         | 0.8     |
| 25.5            | BUCHANAN       | 1         | 0.8     | 25.5 | NEWTON         | 1         | 0.8     |
| 25.5            | CALLAWAY       | 1         | 0.8     | 25.5 | OSAGE          | 1         | 0.8     |
| 25.5            | CARTER         | 1         | 0.8     | 25.5 | PHELPS         | 1         | 0.8     |
|                 |                |           |         | 25.5 | ST. FRANCOIS   | 1         | 0.8     |
|                 |                |           |         | 25.5 | STE. GENEVIEVE | 1         | 0.8     |

| RANK            | COUNTY    | FREQUENCY | PERCENT | RANK | COUNTY      | FREQUENCY | PERCENT |
|-----------------|-----------|-----------|---------|------|-------------|-----------|---------|
| 25.5            | SCHUYLER  | 1         | 0.8     | 77.5 | LINN        | 0         | 0.0     |
| 25.5            | WAYNE     | 1         | 0.8     | 77.5 | MC DONALD   | 0         | 0.0     |
| 25.5            | WEBSTER   | 1         | 0.8     | 77.5 | MACON       | 0         | 0.0     |
| Third Quartile  |           |           |         | 77.5 | MADISON     | 0         | 0.0     |
| Fourth Quartile |           |           |         | 77.5 | MARION      | 0         | 0.0     |
| 77.5            | ADAIR     | 0         | 0.0     | 77.5 | MERCER      | 0         | 0.0     |
| 77.5            | ATCHISON  | 0         | 0.0     | 77.5 | MILLER      | 0         | 0.0     |
| 77.5            | AUDRAIN   | 0         | 0.0     | 77.5 | MISSISSIPPI | 0         | 0.0     |
| 77.5            | BARRY     | 0         | 0.0     | 77.5 | MONITEAU    | 0         | 0.0     |
| 77.5            | BARTON    | 0         | 0.0     | 77.5 | MONROE      | 0         | 0.0     |
| 77.5            | BATES     | 0         | 0.0     | 77.5 | MONTGOMERY  | 0         | 0.0     |
| 77.5            | BENTON    | 0         | 0.0     | 77.5 | NODAWAY     | 0         | 0.0     |
| 77.5            | BOLLINGER | 0         | 0.0     | 77.5 | OREGON      | 0         | 0.0     |
| 77.5            | BUTLER    | 0         | 0.0     | 77.5 | OZARK       | 0         | 0.0     |
| 77.5            | CALDWELL  | 0         | 0.0     | 77.5 | PEMISCOT    | 0         | 0.0     |
| 77.5            | CAMDEN    | 0         | 0.0     | 77.5 | PERRY       | 0         | 0.0     |
| 77.5            | CARROLL   | 0         | 0.0     | 77.5 | PETTIS      | 0         | 0.0     |
| 77.5            | CEDAR     | 0         | 0.0     | 77.5 | PIKE        | 0         | 0.0     |
| 77.5            | CLARK     | 0         | 0.0     | 77.5 | PLATTE      | 0         | 0.0     |
| 77.5            | COOPER    | 0         | 0.0     | 77.5 | POLK        | 0         | 0.0     |
| 77.5            | CRAWFORD  | 0         | 0.0     | 77.5 | PUTNAM      | 0         | 0.0     |
| 77.5            | DADE      | 0         | 0.0     | 77.5 | RALLS       | 0         | 0.0     |
| 77.5            | DAVIESS   | 0         | 0.0     | 77.5 | RANDOLPH    | 0         | 0.0     |
| 77.5            | DE KALB   | 0         | 0.0     | 77.5 | RAY         | 0         | 0.0     |
| 77.5            | DENT      | 0         | 0.0     | 77.5 | REYNOLDS    | 0         | 0.0     |
| 77.5            | DOUGLAS   | 0         | 0.0     | 77.5 | RIPLEY      | 0         | 0.0     |
| 77.5            | GENTRY    | 0         | 0.0     | 77.5 | ST. CLAIR   | 0         | 0.0     |
| 77.5            | GRUNDY    | 0         | 0.0     | 77.5 | SCOTLAND    | 0         | 0.0     |
| 77.5            | HARRISON  | 0         | 0.0     | 77.5 | SCOTT       | 0         | 0.0     |
| 77.5            | HENRY     | 0         | 0.0     | 77.5 | SHANNON     | 0         | 0.0     |
| 77.5            | HICKORY   | 0         | 0.0     | 77.5 | SHELBY      | 0         | 0.0     |
| 77.5            | HOLT      | 0         | 0.0     | 77.5 | STODDARD    | 0         | 0.0     |
| 77.5            | HOWARD    | 0         | 0.0     | 77.5 | STONE       | 0         | 0.0     |
| 77.5            | HOWELL    | 0         | 0.0     | 77.5 | SULLIVAN    | 0         | 0.0     |
| 77.5            | IRON      | 0         | 0.0     | 77.5 | TANEY       | 0         | 0.0     |
| 77.5            | JASPER    | 0         | 0.0     | 77.5 | TEXAS       | 0         | 0.0     |
| 77.5            | KNOX      | 0         | 0.0     | 77.5 | VERNON      | 0         | 0.0     |
| 77.5            | LACLEDE   | 0         | 0.0     | 77.5 | WARREN      | 0         | 0.0     |
| 77.5            | LEWIS     | 0         | 0.0     | 77.5 | WASHINGTON  | 0         | 0.0     |
| 77.5            | LINCOLN   | 0         | 0.0     | 77.5 | WORTH       | 0         | 0.0     |
|                 |           |           |         | 77.5 | WRIGHT      | 0         | 0.0     |

TABLE 4.0.14



## GLOSSARY

**AMBULANCE INVOLVED TRAFFIC CRASH:** Any crash in which one or more ambulances were directly involved in the incident.

**EMERGENCY SERVICE VEHICLE INVOLVED TRAFFIC CRASH:** Any crash in which one or more emergency service vehicles (i.e., police, fire, ambulance, and 'other' emergency service vehicle) were directly involved in the incident.

**FATAL TRAFFIC CRASH:** A crash in which one or more persons were killed as a result of the crash and their death(s) occurred within 30 days of the incident.

**FIRE VEHICLE INVOLVED TRAFFIC CRASH:** Any crash in which one or more fire vehicles were directly involved in the incident.

**PERSONAL INJURY TRAFFIC CRASH:** Any crash in which no person was killed but one or more persons were injured in the incident.

**POLICE VEHICLE INVOLVED TRAFFIC CRASH:** Any crash in which one or more police vehicles were directly involved in the incident.

**PROPERTY DAMAGE TRAFFIC CRASH:** Any crash in which no person was killed or injured but property was damaged in the incident.

**QUARTILE:** The value that marks the boundary between two consecutive intervals in a frequency distribution of four intervals with each containing one quarter of the total population.

**RATE OF CHANGE:** The formula is:

$$\frac{\text{Value in Current Period} - \text{Value in Base Period}}{\text{Value in Base Period}} \times 100$$

**RURAL AREA:** Any community of less than 5,000 population or an unincorporated area of the State.

**URBAN AREA:** Any community in the State having a population of 5,000 or more.



